# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE:

**FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.**

No. 1523.—Vol. XXXIV. LONDON, SATURDAY, OCTOBER 29, 1864. {STAMPED.....SIXPENCE. UNSTAMPED..FIVEPENCE


MR. JAMES CROFTS, SHAREBROKER,
No. 1, FINCH LANE, CORNHILL.
(Established 22 years.)

Mr. Crofts transacts business, in the way of PURCHASE or SALE, in every description of stocks, but particularly in BRITISH MINES, in no case departing from the position of a broker, at net prices.

*,* Holders of mining shares DIFFICULT of SALE in the OPEN MARKET may find purchasers by negociation, through Mr. Crofts' agency. Also, parties requiring ADVICE how to act as to the DISPOSAL, or ABANDONMENT, of doubtful mining stocks may profitably avail of Mr. Crofts' long experience on the market in all cases of doubt or difficulty.

FOR SALE:—100 Prince of Wales, 3s. 6d.; Bedol-Aur; 100 Wheal Unity, 3s. 6d.; South Darren; 20 Wheal Hope, 20s.; 140 New North Minera (mine improved, 12s. 6d. paid), 3s. 3d.; 50 Kelly Bray, 12s.; South Grenville, 10s. 6d.; 1 Lenwood; 1 Cwmbrane; 20 Bryntail, £4.

*,* OFFERS WANTED:—50 Crenver and Abraham, 20 Great Caradon, 25 East Chiverton, 12 Crane, 10 Curtis.

BUYER of 100 Gawton, 7s.

*,* ORDERS to buy or sell RAILWAY and BANK shares promptly executed. MIDLAND RAILWAY stock recommended.

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MR. JAMES LANE, No. 44, THREADNEEDLE STREET, LONDON, E.C.

James Lane has FOR SALE at nett prices:—5 Basset and Grylls; 2 Buller, £15; 25 Bedol-Aur, 11s.; 25 Boscawen, 26s.; 10 Bryntail, £3¾; 50 Crebor, 42s.; 100 Cal' stock Consols, 20s.; 10 Carn Camborne, 32s.; 30 East Providence, £3⅛; 20 East Lovell; 20 East Rosewarne, £3; 10 East Chiverton, £2; 20 East Russell; 25 Great Wheal Busy, £3⅛; 50 Guriyn, 12s. 6d.; 20 Hallenbeagle, £3½; 25 Havan (£5 paid), 25s.; 20 Lady Berths, 12s. 6d.; 50 New Wh. Rose, 5s. 6d.; 20 North Treskerby, £3; 5 Nangiles, £24; 20 North Devon, 35s.; 50 Prince of Wales, 3s. 6d.; 10 Wheal Kitty (St. Agnes), £6; 10 West Caradon, £7; 50 Vale of Towy, 5s. 6d.; 5 Vigra and Clogan, £20½.

He is a BUYER of New Wheal Martha and Sortridge.

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MR. PETER WATSON, 79, OLD BROAD STREET, LONDON, E.C.

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MR. WILLIAM LELEAN BUYS and SELLS all descriptions of ENGLISH and FOREIGN STOCKS and SHARES, INSPECTS MINES, and TRANSACTS all the usual BUSINESS of a STOCK and SHAREDEALER. Parties may rely upon him for sound advice and punctuality in all his engagements.

Mr. Lelean has FOR SALE:—20 Great Laxey, 5 Providence, 50 Bedford United, 10 Clifford Amalgamated, 1 Devon Great Consols, 10 East Basset, 10 East Caradon, 10 East Lovell, 1 South Caradon, 1 St. Ives Consols, 5 Wheal Seton, 2 West Seton, 10 North Treskerby, 50 East Grenville, 50 North Chiverton, 10 South Basset, 50 South Condurrow, 20 Pendeen, 100 Prince of Wales, 2 Leawood, 10 South Darren, 100 West Jane, 20 East Rosewarne, 10 North Crofty, 20 East Russell, 50 East Laxey, 50 Great South Chiverton, 100 Bedol-Aur, 50 East Providence, 100 North Minera, 10 East Treskerby, 10 Trelyon Consols, 50 Rosewarne Consols, 60 North Great Work, 70 Wheal Emma, 25 Trimley Hall, 60 Vale of Towy, 150 Hawkmoor, 20 Crane, 100 Wheal Curtis, 10 East Carn Brea, 200 North Jane, 100 Great Caradon, 10 Sithney and Carnmeal, 20 East Chiverton, and 10 Darren.

I refer my correspondents to my letter in this day's Journal, page 760.

N.B.—Mr. Lelean's "Mining and General Investment Circular," No. 101, now ready, which will be sent free on application.

Bankers: Messrs. Robarts, Lubbock, and Co.

Offices, 11, Royal Exchange, London, E.C.

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RICHARD CLIFT, MINE SHAREDEALER, late of Redruth, now 48, THREADNEEDLE-STREET, LONDON, where all letters are to be addressed.

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JOHN RISLEY, 32, LOMBARD STREET, LONDON, E.C.
SHARES in MINES BOUGHT and SOLD on commission, at 1¼ per cent., for immediate cash. Bankers: London and Westminster, Lothbury.

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MR. THOMAS CARTHEW, MINING OFFICES,
17A, SISE LANE, BUCKLERSBURY, LONDON, E.C.
Reliable information respecting mining generally can be obtained by applying as above.
Bankers: Robarts, Lubbock, and Co., 15, Lombard-street, London.

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MR. T. ROSEWARNE, 81, OLD BROAD STREET, LONDON, E.C., has BUSINESS to TRANSACT in the FOLLOWING SHARES, at close market prices:—

| | | |
|---|---|---|
| Bedford United. | East Chiverton. | North Treskerby. |
| Chiverton. | East del Rey. | New Rosewarne. |
| Chiverton Moor. | Great Fortune. | New Martha. |
| East Russell. | Great South Tolgus. | St. Day United. |
| East Caradon. | Gawton. | Tincroft. |
| East Carn Brea. | Hingston. | Wheal Uny. |
| East Rosewarne. | Kelly Bray. | Wheal Seton. |
| East Lovell. | Marke Valley. | Wheal Grenville. |
| East Basset. | North Downs. | Wheal Crebor. |
| East Grenville. | North Robert. | West Chiverton. |

T. Rosewarne is enabled to give sound advice respecting the purchase or sale of mining shares, for investment the present time presents a most favourable opportunity.

Money advanced on good mining shares.

October 28, 1864. Bankers: Bank of London.

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MATTHEW GREENE, STOCK AND SHAREDEALER,
9, GRACECHURCH STREET, LONDON.
Matthew Greene strongly advises the purchase of East Laxey shares at present prices.
Commission, 1¼ per cent.
Bankers: London and County Bank.

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MR. J. W. GILBERT, MINE SHAREBROKER,
1, PINNER'S COURT, OLD BROAD STREET, LONDON.

J. W. Gilbert recommends the immediate purchase of shares in the following mines, having confidence a rise of 50 per cent. (and above) will take place before Midsummer, 1865:—

| No. of shares. | | No. of shares. | |
|---|---|---|---|
| 1906 .. East Lovell | £10⅝– 11 | 501 .. Tresavean & Tretharrup (with £12½ per share called up, these shares in former working sold at £1900 each.) | £7⅛– 8 |
| 6000 .. East Carn Brea | 6⅜– 7 | | |
| 6000 .. North Chiverton | 2 – 2⅛ | | |
| 1368 .. North Grambler | 2¾– 3⅛ | | |
| 50000 .. Frontino & Bolivia | 15s.– 20s | | |

October 28, 1864. FOR SALE:—20 Wheal Arthur, 3s.

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MR. D. STICKLAND, M.E., having had upwards of 40 years' mining experience in Cornwall, several years of which he has had the entire management of mines therein, enables him to GIVE GOOD ADVICE thereon.

MINES INSPECTED and faithfully REPORTED ON. DEALER in MINING, RAILWAY, and OTHER SHARES.

His monthly "Circular" for August contains a selected list of Cornish and other mines. Forwarded on receipt of six postage stamps.

Wellington Chambers, 75, Cannon-street West, London, E.C.

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MR. JOHN BATTERS, STOCK AND MINING SHAREBROKER, 13, THROGMORTON STREET, LONDON, E.C., pays particular attention to British Lead, Copper, and Tin Mines, for which he solicits orders to sell or buy, at nett prices.

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MR. WALTER TREGELLAS, STOCK AND SHAREBROKER,
3, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C., strongly recommends the following mines for investment, which are safe to have a rise in price:—Santa Barbara Gold, North Roskear, North Shepherds, Wheal Lovell, New Rosewarne, New Wendron, East Basset and Grylls, New Trevenen, and Great Wheal Vor.

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MR. J. P. ENDEAN, STOCK AND SHAREBROKER,
1, CROWN COURT, OLD BROAD STREET LONDON, E.C.

Having had 25 years' experience in the mining districts of Devon and Cornwall, and three in the London market, with daily information of important changes from qualified agents, also the most authentic reports relating to other investments, he is in a position to afford the earliest information to his clients, and to direct capitalists whether to buy or sell in mines, railways, or other securities.

Investors should apply to him for reliable information relative to the Chiverton Mines, also the Camborne and Illogan districts.

A carefully selected list of sound progressive and dividend shares (certain to give a large percentage immediately) forwarded on receipt of 5s. in stamps.

Orders and telegrams receive immediate attention.

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MR. GEORGE BUDGE, SHAREDEALER, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 17 years), has FOR SALE at nett prices:—50 Kelly Bray, 12s. 6d.; 50 East Rosewarne, £2 18s. 9d.; 150 Don Pedro, 11s. 3d.; 200 Wheal Pollard, 1s. 9d.; 100 Welshpool, 19s.; 2 Minera; 20 East Lovell, £10¾; 50 Sithney Wheal Metal, £1⅝; 20 Wheal Grenville: 50 Hingston Down; 30 East Russell, £4¾; 100 Frontino and Bolivia, 17s. 6d.; 20 Trencrom, £2⅞; 150 Santa Barbara, 8s.; 20 North Minera, 3s. 6d.; 20 East Caradon; 5 East Basset; 200 Anglo-Brazilian, 5s. 3d.; 2 West Sharp Tor, £65: 150 Calstock, 18s. 6d.; 150 Bottle Hill, 1s. 9d.; 3 Herodsfoot; 25 Wheal Union, 24s.; 150 East Seton; 5 Great Fortune; 100 Nant-y-Iago, 5s.; 10 Sithney Carnmeal; 200 Redmoor, 3s. 6d.; 20 Chiverton, £5⅞; 50 East Providence, 63s. 9d.; 7 Long Rake; 50 Central Minera, 2s. 6d.; 2 West Basset; 1 South Caradon; 50 East Grenville; 5 Vigra and Clogan, £21¼; 50 Dale; 30 Queheala (£10 paid).

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GEORGE MOORE,
1, CROWN COURT, THREADNEEDLE STREET.

JAMES HERRON has FOR SALE the following SHARES, at the prices quoted, and FREE OF COMMISSION:—

| | | |
|---|---|---|
| 10 Anglo-Mex. Mint, £18¼ | 5 Great Fortune, £7⅜. | 20 South Lovell, £2. |
| 10 Brynford Hall, £6⅛. | 1 Grambler. | 10 South Darren. |
| 5 Billins, £13. | 10 Glasgow Caradon, £2⅞. | 20 Sithney Metal, 25s. |
| 30 Bottle Hill, 2s. | 5 Great Laxey, £15 12s 6d | 50 Santa Barbara, 8s. 3d. |
| 10 Bryn Gwiog. | 30 Gt. South Chiverton. | 30 St. Day United. |
| 5 Bryntail, £3. | 10 Gt. Wh. Busy, £2 7s 6d | 5 St. John del Ray, £31. |
| 2 Buller, £12. | 20 Hallenbeagle, £3. | 100 St. David's Gold, 6d. |
| 5 Clifford Amalgamated. | 5 Hingston Down, £4 3 9 | 50 St. Just Consols, 3s. 9d. |
| 1 Cargoll, £37¾. | 20 Kelly Bray, 11s. 6d. | 1 Stray Park, £20. |
| 2 Carn Brea, £52½. | 20 Lady Bertha. | 1 Trelawny, £19⅞. |
| 5 Cwm Erfin, £34. | 30 Linares, £5¾. | 10 Tolvadden, 15s. 9d. |
| 20 Chiverton Valley. | 10 Marke Valley, £4½. | 30 Tincroft, £15⅝. |
| 50 Cape Copper, £8⅜. | 50 Mariquita. | 20 Treleigh, 12s. 9d. |
| 30 Carn Camborne, 32s. 6d. | 20 Nant-y-Iago, 3s. 6d. | 50 Treweatha. |
| 20 Chiverton Moor, £2 12 6 | 10 North Pool, 38s. 9d. | 100 United Mexican, £4½ |
| 10 Chiverton, £5¾. | 5 North Wh. Crofty, £3. | 5 Vigra and Clogau, £21. |
| 10 Cobre, £27. | 50 North Devon, 37s. 6d. | 50 Vale of Towy, 5s. |
| 5 Cook's Kitchen, £12⅜. | 10 North Downs, 20s. 9d. | 1 W. Chiverton, £58¼. |
| 10 Elijah & Went., £3¼. | 15 New Wendron, £3 3s 9d | 1 West Sharp Tor, £63. |
| 1 Devon Great Consols. | 10 North Treskerby, £3. | 10 Wheal Edward, 10s. 9d. |
| 50 Don Pedro, 6s. 9d. | 70 North Minera, 3s. 9d. | 1 Wheal Seton, £200. |
| 20 Drake Walls, 18s. 9d. | 30 New Martha, 22s. 6d. | 5 West Caradon, £7 5s. |
| 1 East Basset, £55. | 1 North Roskear, £19. | 1 West Tolgus, £56. |
| 10 East Carn Brea, £6¾. | 20 North Shepherds, 36s 6d | 20 Wh. Grenville, £5 17 6 |
| 30 East del Rey, 8s. 9d. | 1 New Seton, £62½. | 5 Wheal Margaret. |
| 5 East Russell, £4⅝. | 5 Nangiles, £24½. | 1 West Frances, £24. |
| 20 East Lovell, £10⅝. | 20 North Basset, 33s. | 10 Wheal Hope, 20s. |
| 10 East Chiverton, 30s. | 5 New Rosewarne, £11. | 10 Wheal Harriett, 8s. |
| 10 E. Rosewarne, £2 18 9 | 100 Port Phillip, 18s. 9d. | 50 Worthing, 18s. 3d. |
| 20 East Grenville, £7 12 6 | 10 Prosper United. | 10 Wheal Crebor, 39s. 9d. |
| 10 East Laxey, 36s. 9d. | 30 Prince of Wales, 3s. 6d. | 10 Wentworth Consols, £7. |
| 5 East Providence, £3 8 9 | 1 Polbreen, £13½. | 5 West Basset. |
| 5 East Caradon, £23¼. | 30 Quebrada (£6 10s. paid), £5 10s. | 5 Wendron Consols, £3. |
| 50 Fortuna, £3 8s. 9d. | 10 Rosewarne United. | 1 Wh. Mary Ann, £16 18 9 |
| 5 Gt. Wh. Vor, £35¼. | 50 South Grenville, 9s. 9d. | 50 Wheal Unity, 3s. 3d. |
| 50 Gt. Northern Copper, 1s. (call paid). | 20 South Condurrow, 37s. | 1 Wheal Basset, £91. |
| | | 5 Wheal Uny, £3 13s. 9d. |
| | | 50 Yudanamutana, £1⅞. |

For a considerable period there has not been so favourable an opportunity as the present for investing in a few mines that cannot fail to return large profits in the course of a few months, but it must be understood that great care should be made in the selection.

Mr. Herron will be happy to advise with those who have capital to invest, and from his lengthened experience that advice may prove of some value to those who are desirous of making a speculation in mining property.

2, Adam's-court, Old Broad-street, October 28, 1864.

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MESSRS. VIVIAN AND REYNOLDS, 37, OLD BROAD STREET, LONDON, E.C., MINING ENGINEERS, INSPECTORS of MINES, COMMISSION, and GENERAL AGENTS for the PURCHASE or SALE of MINE SHARES, RAILWAY, and EVERY OTHER DESCRIPTION of STOCK.

Commission on share transactions 1¼ per cent. on £100 and above, and 2½ per cent. on less sums.

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MR. EDWARD COOKE, MINING SHAREBROKER,
2, CROWN CHAMBERS, THREADNEEDLE STREET, LONDON, E.C.
Mr. Edward Cooke has removed to the above address, where all communications on matters relating to business will meet with his usual attention.
Oct. 28, 1864. Bankers: Alliance Bank, Lothbury.

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MR. GEORGE BATTERS strongly recommends his friends to buy West Chiverton, Chiverton, Herodsfoot, South Caradon, Devon Great Consols, Great Wheal Vor, Prosper United, Wentworth Consols, and Sithney Wheal Metal for investment. These shares will pay good interest for money at present quotations.
76, Old Broad-street, London, E.C.

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MR. THOS. THOMPSON, MINING OFFICES,
12, OLD JEWRY CHAMBERS, LONDON, E.C.

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WILLIAM SEWARD, MINING BROKER, STOCK AND SHAREDEALER, 19, THROGMORTON STREET, LONDON, E.C.
Commission, 1¼ per cent. on all transactions.

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MR. WM. BIRDSEY, MINE AND SHAREBROKER,
No. 2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.
W. Birdsey is a BUYER of 500 (or any part of) Alten and Quœnangen Mining Company (Limited), at £2 per share.

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MESSRS. WARD AND JACKMAN, SHAREBROKERS,
2, ADAM'S COURT, OLD BROAD STREET AND
MINING EXCHANGE, LONDON, E.C.
Bankers: London and Westminster, Lothbury.

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MR. G. D. SANDY, SHAREDEALER, No. 48, THREADNEEDLE STREET, LONDON, E.C., has SPECIAL BUSINESS in the FOLLOWING SHARES:—

| | | |
|---|---|---|
| 60 Bedol-Aur. | 100 Great Retallack. | 3 Stray Park. |
| 20 Camborne Vean. | 100 Great South Chiverton. | 50 West Great Work. |
| 2 Clifford Amalgamated. | 20 Great Laxey. | 20 Wheal Agar. |
| 5 Crane. | 5 New Rosewarne. | 3 Tremayne. |
| 20 Chiverton. | 50 North Downs. | 35 Wh. Kitty (St. Agnes). |
| 20 East Grenville. | 25 North Shepherds. | 10 Wheal Ludcott. |
| 50 East Laxey. | 50 North Treskerby. | 3 Wheal Reeth. |
| 20 East Rosewarne. | 30 No. Devon Silver-Lead, 30s. 6d. | 200 Unity. |
| 10 Gonamena. | | 100 Vale of Towy. |
| 15 Great North Downs. | 20 Pendeen Consols. | |

N.B.—Sellers or buyers of any of the shares named can be treated with at close prices, nett or on commission.

A selected list of *bona fide* shares for investment forwarded gratis.

Current Daily Price List may be obtained as usual.

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JAMES HUME, SHAREBROKER, 74, OLD BROAD STREET, AND MINING EXCHANGE, LONDON, E.C.

| | Friday—Closing prices. | | Friday—Closing prices. |
|---|---|---|---|
| East Caradon | £22 –22½ | Great Vor | £34¼– 34¾ |
| East Grenville | 7¼– 7⅝ | Hingston Down | 4 – 4¼ |
| East Lovell | 10¼–11 | South Condurrow | 36s.–40s. |
| East Russell | 4¼– 4¾ | West Tolgus | 60 –65 |

South Condurrow.—Mr. Hume is a buyer. Sellers will please state lowest price, cash paid.

West Tolgus.—Mr. Hume recommended these shares at £45, and upwards; the mine will soon rank with the richest mines of the Seton and Tolgus district. A BUYER of the shares.

Great Vor.—Mr. Hume recommended these shares at prices under £30; those who acted on his advice can now get good profits, if they choose to sell. Were it not for the price of tin being so unremunerative, Mr. Hume would consider this a good investment at still higher prices.

Business done at closest, nett, or commission prices.

Bankers: London Joint-Stock Bank.

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GEORGE RICE, SHAREBROKER, 5, COWPER'S COURT, BIRCHIN LANE, LONDON (22 years' experience), Member of the Mining Exchange, has SPECIAL BUSINESS, as BUYER or SELLER, in the following:—

| | Closing quotations. | | Closing quotations. |
|---|---|---|---|
| Clifford Amalgamated | £30 –30½ | East Wheal Grenville | £7 8 9– 7⅝ |
| Chiverton | 5½– 6 | Great Wheal Vor | 35 –35½ |
| East Russell | 4½– 4¾ | Nangiles | 23½–24½ |
| East Carn Brea | 6⅝– 7 | North Treskerby | 2½– 3 |
| East Caradon | 22¾–23 | Wheal Crebor | 39s.–41s. |
| East Wheal Lovell | 10⅝–11 | Wheal Grenville | 6¾– 7 |

Great Vor, East Lovell, East Grenville.—G. Rice can BUY or SELL at fair prices, and give good sound advice to those who may require it.

Great Devon and Bedford, Colcharton (Limited).—G. Rice has business in 150 shares (the 37s. 6d. paid).

For all shares purchased by G. Rice he will pay cash on receipt of transfer.

Money advanced on mining shares.

Oct. 28, 1864. Bankers: Bank of London.

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MR. WILLIAM MARLBOROUGH, 1, GREAT ST. HELEN'S, BISHOPSGATE STREET, LONDON, E.C. (late of 48, Threadneedle-street), STOCK AND SHAREDEALER. (Established Ten Years.)

FOR SALE:—40 Wheal Arthur, 3s. 6d.; 50 Lady Bertha, 11s. 3d.; 60 Kelly Bray, 11s. 9d.; 15 East Rosewarne, £2 18s. 9d.; 70 Bedol-Aur, 11s. 6d.; 10 East Laxey, 37s.; 50 Vale of Towy, 5s. 3d.; 30 Wheal Crebor, 49s. 9d.; 50 Great Retallack, 2s. 3d.; 10 Carn Camborne, 33s. 9d.; 15 Camborne Vean, 28s.; 5 Calvadnack, 20s.; 5 Copper Hill, £7¾; 70 Caradon Hill (offer wanted); 10 East Russell, £4¼; 15 East Grenville, £7⅝; 40 South Grenville, 9s. 3d.; 2 New Rosewarne, £10¼; 10 Bryntail, £3½; 20 North Treskerby, £2 13s. 9d.; 5 Great Laxey, £16⅜; 50 Wheal Unity, 3s. 3d.; 5 East Lovell, £10⅝; 3 West Caradon, £6⅞; 5 Wheal Chiverton, £5¾.

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NOTICE OF REMOVAL.

MR. T. P. THOMAS begs to inform his friends and the public that he has REMOVED from No. 2, Crown-court, Threadneedle-street, to No. 6, NEW BROAD STREET, LONDON, E.C., where he trusts to receive a continuation of their favours in his business of sharebroker and share auctioneer.

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VALUABLE MINING AND OTHER SHARES FOR SALE, BY PUBLIC AUCTION.

MR. T. P. THOMAS begs to inform his friends and the public that he will hold his NEXT SALE, BY PUBLIC AUCTION, of MINING and OTHER SHARES at Garraway's Coffee-house, Change-alley, Cornhill, London, on Thursday, the 24th day of November next, at One o'clock, particulars of which will appear in the next Mining Journal, and he particularly requests parties desirous of offering shares at that sale to favour him with their instructions not later than Wednesday, the 16th day of November next, that they may be advertised in the Mining Journal, and inserted in the printed catalogues of sale.

6, New Broad-street, London, E.C.

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MR. T. E. W. THOMAS, MINING AGENT AND GENERAL MINING SHAREDEALER,
2, PINNER'S COURT, OLD BROAD STREET, LONDON.

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MR. FRANCIS G. LANE, No. 2, ROYAL EXCHANGE, LONDON, E.C., has the following SHARES FOR SALE, free of commission:—

| | | |
|---|---|---|
| 20 East Caradon, £22½. | 50 North Minera, 3s. 10d. | 20 Treworlis, £1⅛. |
| 10 Great Laxey, £16⅛. | 100 Merlyn, 6d. | 50 Wheal Hartley, 7s. 6d. |
| 20 Furze Hill Wood, 3s 6d | 20 Marke Valley, £4¼. | 10 New Wh. Vor & Metal United, 1s. |
| 50 Wheal Crebor, 41s. | 5 Nangiles, £23. | |
| 10 South Darren, 35s. | 20 North Devon. | 10 Wentworth Consols, £7 |
| 15 North Shepherds, 35s. | 50 Vale of Towy, 5s. | 50 North Basset, 31s. |
| 15 St. Just United, 38s. | 10 Cape Cornwall (£2 10s. paid), 27s. | 50 Prince of Wales, 3s. 6d. |

BUYER of Rosewarne Consols.

Parties of respectability can have transfers registered into their names previous to payment. Bankers: London and County Bank.

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MR. F. W. MANSELL, MINING SHAREBROKER,
75, OLD BROAD STREET, LONDON, E.C.

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MR. JOHN R. PIKE, GENERAL SHAREDEALER,
OFFERS his SERVICES to INVESTORS.
3, PINNER'S COURT, OLD BROAD STREET, LONDON.

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WILLIAM WARD,
29, THREADNEEDLE STREET, LONDON, E.C.

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MR. E. GOMPERS, MINING OFFICES,
3, CROWN CHAMBERS, THREADNEEDLE STREET, LONDON, E.C.
BUSINESS TRANSACTED in BRITISH and FOREIGN STOCKS and SHARES.
Terms, 1¼ per cent. Bankers: London and Westminster Bank.

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MR. H. WADDINGTON, MINING AND SHAREBROKER,
20, THROGMORTON STREET, LONDON, E.C.
Shares in railways, mines, &c., bought and sold on the usual commission.
Clifford Amalgamated, Grambler and St. Aubyn, East Grambler, and Great South Tolgus should be bought at once. West Seton shares should be bought at the present reduced price.

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NOTICE OF REMOVAL.

MR. J. B. REYNOLDS has REMOVED from 54, Threadneedle Street, to 2, HATTON COURT (49, Threadneedle Street).
N.B.—Orders to buy and sell mining shares promptly attended to.
October 28, 1864.

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NOTICE OF REMOVAL.—Mr. JOHN GREEN begs to intimate to his friends and correspondents that he has REMOVED from No. 32 Austinfriars, to No. 9, GRACECHURCH STREET.

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BRITISH AND FOREIGN MINING OFFICES,
No. 2, BUCKLERSBURY, LONDON, E.C.—Mr. WILLIAM BARTLETT is a BUYER of EVERY DESCRIPTION of MINING SHARES, for cash on delivery of transfer, and recommends for immediate investment Clifford Amalgamated, Great Wheal Vor, Kelly Bray, North Treskerby, Wheal Seton, Nangiles, and Tincroft, all of which are safe for a speedy rise in price.

Bankers: Alliance Bank, Lothbury.

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FOR SALE, FIFTY NORTH POOL SHARES (or any part), at £3 10s. per share, cash.—Apply to Mr. T. Carter, mine sharedealer, Camborne.

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GREAT DEVON AND BEDFORD.—TWENTY SHARES in this mine FOR SALE, at 25s. (37s. 6d. paid).—Address, "G. D. B.," Post-office, West Bromwich.

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EAST WHEAL VOR SHARES.—WANTED, FIFTY or ANY PART. State number and lowest price.—Address "Alma," New Inn, Pontypridd.

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CARADON UNITED MINE, ST. NEOT, LISKEARD.—The NEW ROTARY ENGINE, STAMPS, PITWORK, &c., will all be OFFERED FOR SALE, BY AUCTION, in NOVEMBER.

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A PRACTICAL MINING and MECHANICAL ENGINEER, of 25 years' experience at home and foreign, and who speaks Spanish and Italian fluently, is DESIROUS of an ENGAGEMENT, at home or abroad; or would UNDERTAKE the SURVEY and INSPECTION of ANY MINING PROPERTY in any part of the world.—Address, "B.," Mining Journal office, 26, Fleet-street, London, E.C.

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MINING CAPTAIN.—The ADVERTISER, a THOROUGHLY COMPETENT and PRACTICAL MINE MANAGER, WISHES for a SITUATION as above, either in England, Australia, or America. Good and trustworthy testimonials can be seen on application to "F. R.," Mining Journal office, 26, Fleet-street, London, E.C.

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# Original Correspondence.

## THE EARTH'S CRUST.

Sir,—Permit me to point out a misstatement in Mr. N. Ennor's last letter on his views of the Earth's Crust. He calls attention to, and gives a sketch of, a diagram, which he states is a rough copy or outline of one got up at the Jermyn-street School. No such diagram was ever got up or published by the authority of the Royal School of Mines.

*Jermyn-street, S.W., Oct.* 24. Trenham Reeks, Registrar.

## THE TIN TRADE.

Sir,—Several statements having from time to time appeared in your Journal, with a view to show that the present price of tin is exceptional, and produced by events foreign to the market, such as a combination of smelters to buy ore, the depression of trade, the high rate of discount, or other causes which must, sooner or later, pass away, and the market again become restored to the high prices which have ruled for several years past, you will, I hope, allow me to express my conviction that the present price of tin is perfectly justified by the state of the market, that it is the inevitable result of an excess of supply over demand, and that until this is remedied, which, under existing circumstances, is neither imminent nor probable, lower, and very much lower, prices must be expected and prepared for. The Government statistics establish the fact that the production of English tin in Cornwall, during the last five years, has, year by year, been materially increased, say from—

| | | | |
|---|---|---|---|
| 1860 | 6675 tons. | 1863 | 10,006 tons. |
| 1861 | 7450 „ | 1864 at the rate of | 10,806 „ |
| 1862 | 8476 „ | | |

The import of tin has also at the same time been largely increased, say—

| | | | |
|---|---|---|---|
| 1860 | 2911 tons. | 1863 | 2728 tons. |
| 1861 | 3653 „ | 1864 at the rate of | 4230 „ |
| 1862 | 4394 „ | | |

Making the total supply of 1864, 4650 tons in excess of the supply for 1860, a quantity of itself sufficient to supply the requirements of the entire kingdom for the next nine months. Added to this, the Dutch Government having decided on quarterly sales, another 1000 tons per quarter is placed on the market to find buyers, and to depress prices. The result of this excessive supply is obvious from the present state of the market. Straits tin has accumulated gradually, but surely, from month to month in the London warehouses; and, starting from a stock of 800 tons in 1860, worth 140*l.* per ton, we arrive to-day at a stock of 3660 tons, altogether unsaleable at 96*l.*, while English tin is daily offered by the leading smelters at 2*l.* or 3*l.* below the official list prices.

The increase in the London stock has been as follows—

| | | | |
|---|---|---|---|
| Jan. 1, 1860 | 800 tons. | Jan. 1, 1863 | 2350 tons. |
| „ 1861 | 380 „ | Oct. 1, 1864 | 3660 „ |
| „ 1862 | 1585 „ | | |

An excess of supply, therefore, being evident, and the results patent to all, it only remains for us to consider whether there is any remedy near at hand, and for this we can only look to two events—either the production must be decreased or the consumption must be increased. First, as regards production: The Cornish tin being found in larger quantities, and raised cheaper than in former years, must and does continue to come forward; and it is not to be supposed that mines with large establishments can be quietly shut up and put aside; it is more probable that the adventurers will seek by an increase of *quantity* to make up the dividends which have been lost to them by the decline in the value of their produce. The Dutch Government, finding themselves with a declining revenue from the low prices realised for their Banca tin, would naturally look to restore their finances by increasing the supply, which is practically inexhaustible, and can be delivered in London at 60*l.* per ton.

Next, as regards consumption: The price of tin does not affect the quantity consumed, for our statistics show that quite as much goes into use at 140*l.* as at 96*l.*, and while consumption has remained stationary, the exports show the slightest, if any, increase, and as we cannot at present look for any relief to the market from either of these sources, the value of tin must continue to decline until the price either shuts off a large portion of the present excessive supply, or tin becomes sufficiently cheap to render it available for other purposes to which it has not yet been applied.

*Oct.* 26. Cymro.

## THE DOLCOATH MEETING.

Sir,—What a pleasant thing is a mine account meeting when there is a dividend to be declared! People flock to such a gathering from all quarters, assured that they will find a welcome, a good dinner, and lots of punch afterwards. Resolutions of thanks to the manager and agents are passed *nem con*, and woe betide that unlucky shareholder who dares to breathe disapprobation of the management of agents who have a dividend to offer. All miners know from experience what jolly occasions these meetings are, but it must often have struck them that very rarely does any dicussion take place at such times on subjects of general interest to the mining community at large. Everyone must hail, then, with pleasure the speeches which were made after the meeting at Dolcoath. At this meeting a dividend was as usual declared; this time it amounted to 6*l.* per share, and it would, undoubtedly, have been higher had the price of black tin been the same as it was three years ago. Now, the circumstances attending the declaration of this dividend were pretty much what they always are—toasts were proposed and heartily drunk, and the whole affair might have passed off with *eclat*, but for the two short speeches that closed the proceedings, that of the manager and that of the only tin smelter present. These speeches will, no doubt, be read by every mine agent in Cornwall. On this ground, then, and believing that the impressions they convey are likely to mislead rather than to guide, it may be well to examine them.

When once the tide of success sets in with one who, it may be, has hitherto lacked the smiles of Dame Fortune, how prone we all are to set down the success of the favoured one to his peculiar sagacity and knowledge. Those who share the prosperity of such men seem blinded to all their failings by the brilliancy of their success, and the favoured manager seems satisfied so long as he is enabled to declare a profit to his employers. Surely amongst the number of those shareholders who attend periodically these meetings at Dolcoath there must have been some who have been struck with the great expenditure in dressing the tin ore of this mine. Will it be going too far to say that in but few tin mines in the West is the cost of dressing so great as in this mine. The most casual and ignorant miner must be struck with this fact, and be astonished, that despite the improved trunks, and ingenious method of washing out the slime pits, and other arrangements adopted at this mine, so large a quantity of tin is lost from want of care in the after processes. Since, however, this is written not with the object of depreciating the knowledge and acquirements of those who manage at this, the most successful mine of the west, but rather to answer the ideas conveyed in the speeches of both manager and shareholder at this particular meeting, it will be better to keep to the subject of the speeches. First, the manager tells us that we should discourage the emigration of our best Cornish miners by paying them well, lest we lose the good, whose knowledge will find a higher market abroad, and retain only the bad. In answer to this, it is much to be doubted whether the number of miners in Cornwall does not far exceed the demand for labour. That it is so in some districts is certain, for miners in many parts have to go miles and miles to obtain labour, and then only succeed in obtaining short jobs. Now, with the present downward tendency in the value of all metallic produce, can the miner expect that the shareholder is in a position to increase his wages? If this depreciation were likely to be of short duration, such a proposition might be well started with impunity, but since there appears as yet no prospect of improvement, we would say to the large portion of the Cornish miners, emigrate. Go out to the colonies, not with the idea that you will make rapid fortunes, but with the determination to work hard; and then, with ordinary economy and perseverance, you will live to return with a sufficiency. To expect high wages at the present time in the mining districts is to expect an impossibility. This is not, it must be remembered, meant to convey the idea that the profit on mining should be screwed out of the miner's wages, and that his welfare should be of no consequence to his employers, but rather to assure the miner that high wages he must not now look forward to. That we should in a continued emigration lose some good men is probable, for the best men are generally the most enterprising, but that we should endanger by encouraging emigration the loss of all is not likely; nor is it in the least probable that mining enterprise will suffer from want of labourers of the right sort. Surely it would be wiser to attempt to raise the intellectual and moral tone of our mining population generally by education, than to encourage the idea that you must pay a fictitious price to the favoured few, and that you cannot accomplish your work without them. Here it is but right to point to that severe lesson which is now being taught the colliers on strike in the Dudley coal fields—that the value of labour must be regulated by the demand for it and the difference between the value of the produce of that labour and the amount required to maintain and support the employers of the labourer.

With respect to the tin smelter, who complains that he is so pitifully snubbed, all must be really sorry for him, but his speech does not at all convince the reader that he is treated in any other way than it might be supposed any new smelter in the copper or any other smelting trade would be by those who are members of long established firms. And if this said smelter has not based his calculations of profits in such a manner as will allow him to compete with those who have already established their connection and friends he will assuredly come to grief; but who can he blame but himself? He tells us he has made no profit out of his smelting as yet, and this anyone could have told him was probable from the first, and now might safely add that he is not likely to make any money by tin smelting for a long time to come. Whether this particular smelter makes a profit or not is no concern to the miners. On reading his speech, however, it would appear that he hesitates whether he shall use his influence to reduce the present price of black tin by advocating public ticketings, or whether he shall trust, as heretofore, to his mining interest for his supply of ore. This is a question he must himself settle, but when he tells us that by altering the present mode of selling black tin he wishes to forego his position as a smelter, and advocate alone the interest of the miner, we warn all who are interested in mines to stop their ears, for never was there a more erroneous idea propagated than that of an advantage to the miner by public ticketing. Everyone who calmly surveys the question must be compelled to admit this, or they will eventually discover, when too late, that this is but the cry of the wolf in sheep's clothing. Truths must be repeated until their realisation is effected: with this excuse, and no other can be needed, it remains but to reiterate what has been so continually argued in the *Mining Journal*—that the present low price of tin is not the result of the imperfect mode of selling tin ore, nor of the differences amongst the smelters, but only, and entirely, caused by excess of supply over demand. Apart from this there is, moreover, a depression in all produce from the monetary crisis through which the commercial world of England is now passing, a crisis the end of which seems yet distant. In conclusion, it may be stated that tin miners are not the only ones suffering from these difficulties, and with this sop they must, like many others, be satisfied. Miner.

## ON THE DRESSING OF ORES—No. I.

Sir,—I have frequently seen and read with pleasure in your excellent Journal accounts of new machines and processes employed in the mechanical preparation or dressing of ores; these, with your lengthy reports of Professor W. Smyth's lectures at the Royal School of Mines, which, with the means at his command, should keep your readers pretty well acquainted with the machines in general use, and with the most important improvements, must prove interesting to everyone engaged in mining, and who is anxious to know what is doing out of his own locality. It has, however, occurred to me that the efforts generally of inventors of ore-dressing machines have been directed to the construction of machines for particular operations, rather than to form a combination of machinery, by which the ores shall be kept in continual motion, until they are completely separated from the refuse, and either fit for the market, as in the case of copper or lead ores, or for the calcining furnace, as in the case of the first processes in the dressing of tin ores. I may be very sanguine, and think it easy to effect this, while those possessing greater practical experience may widely differ from me, or I may be displaying that ignorance of the subject which a long absence from the Cornish mining districts must occasion, by venturing to propose a thing which may already be in practice there; but I hope your readers will bear with me while I invite their attention to this subject, which all must acknowledge to be of the greatest importance to those concerned in mining operations.

In the mechanical preparations of ores two natural principles are employed—the action of gravity, by which particles of unequal weight are separated, the heavier falling to the bottom; and inertia, by which particles of unequal size and weight are separated by the different resistances offered to running water on an inclined plane, the heavy particles offering greater resistance than the light ones, or the smaller particles presenting a less surface than the larger, and, therefore, remaining towards the top of the plane. The whole system, then, of washing ores consists in the placing them in such a condition that one or the other of these principles may act upon them. The old methods of buddling, trunking, framing, jigging, &c., by hand, have long since given way to machines which profess to perform those operations more rapidly, but only in a few cases do they profess to perform them better, while in every case the operation is frequently interrupted, before it is completed, for the purpose of removing from one machine to another, or for a repetition by the same machine.

I wish, with your permission, to show, in two or three letters, that there exist already suitable machines for effecting the object I propose—an arrangement of machinery by which an uninterrupted action may be obtained, and the changes necessary for the carrying out of that object, leaving your readers to decide whether my suggestions are worthy of a trial or not.—*Alveston-house Academy, Liverpool, Oct.* 24. W. Rickard.

## PNEUMATIC ELEVATOR FOR MINES AND COLLIERIES.

Sir,—The leading article in last week's Journal, on the mortality of miners in Cornwall, proves that there is something radically wrong in the present state of mining. Your statistics show that the mortality is 70 per cent. above the average; and as I happen to be in a position not only to point out the cause of this mortality, but to suggest a remedy, I offer no apology for the present communication.

The cause of the debilitated condition of the Cornish miners, so graphically set forth by the Government Commissioners, is easily accounted for, and I am only surprised that, in pointing out the evil, the Commissioners should have omitted to state its cause. In Cornwall the mines are very deep, varying from 100 to 300 fathoms: the only access to these deep mines being ladders, which is killing work for the men. A mine of 900 ft. is double the depth of the height of St. Paul's, and if anyone will ascend that edifice twice a-day, besides doing a day's work, for any length of time, he will find his health give way, and his life shortened. To show that the ladders are the great cause of the evil, I need only refer to the colliery district of Northumberland and Durham, where no ladders are used; there the ventilation is as bad as in Cornwall, and yet the mortality is much less. The great cause of the evil is, undoubtedly, the use of ladders, and that will be removed with the best possible effect by the pneumatic elevator.

This elevator, which is destined to work so great a reformation in mining, may be described thus:—I place a cylinder of cast-iron in the shaft of from 4 to 5 feet diameter, which cylinder reaches from the top to the bottom of the shaft. A double-headed piston works in this cylinder, with a platform between the two heads, on which a bucket or wagon, containing the minerals or coals, is placed, and by which the men are lowered and raised. An engine for pumping air is placed at the top of the shaft, which forces air down the shaft in a small tube. The forced air is introduced below the piston, at the bottom of the shaft, which raises the platform to the top, and by letting off the air at the bottom, the mine is ventilated, and the platform descends. A self-acting valve on the air-tube, at the bottom, opens when the plattorm rises, and shuts when it descends, therefore if anything goes wrong with the engine or machinery, the platform could not possibly fall. A valve is used on the cylinder at the bottom to allow the air to escape. This valve is worked from below. By shutting it the platform rises, and by opening it it descends. Sliding doors in the cylinder are used at each stopping place, at the levels or headings in the shaft, which will be more convenient than ordinary doors. The pressure of air in the cylinder will, of course, depend on the weight of the load to be carried; but if that does not exceed 30 cwts., inclusive of friction, the pressure required will only be 2 lbs. to the square inch. If the machine is worked with vacuum alone, as in the case of the Pneumatic Railway, which is thought by some to be the preferable mode of working it, no air-tube or forced air will be required. With a vacuum 30 cwts. will be raised with an exhausting power of 2 lbs. to the square inch.

But not only are ladders objectionable, but ropes are the same. To allow human beings to be sent down dark and dismal pits in buckets suspended by frail ropes, is something terrible to think of; and so objectionable are they, that the Cornish miners have always refused to use them. Ropes have only been used because nothing better had been devised. Accidents either from negligence or breaking of the ropes are of daily occurrence, but with the pneumatic elavator the risk of accident is so extremely small, that if the men wished to commit suicide in it they could not do so. Ropes are certainly better than stairs or ladders, but both are bad, and the sooner they cease to disgrace the mining world the better. As a ventilator the new machine is invaluable for collieries and mines. At present, ventilation is effected by air-shafts, which are not only expensive, but most inefficient. The heat and gases in deep workings are insufferable; and when to this is added the smoke from shots in blasting, the value of good ventilation may be conceived. The cold air will come down the cylinder and be conveyed to the extremities of the mine in tubes, where it will escape, and drive the hot air before it up the shaft. With bad ventilation the men soon become exhausted, and can only do half a day's work, which not only injures the health of the men, but reduces the out-put of the mine or colliery, to the great loss of the proprietors.

Anything approaching to a perfect ventilation has never been reached in mining, but with the new machine fresh air will be circulated without stint, and almost without cost. I am satisfied that the value of this machine, as a ventilator alone, is more than equal to its whole cost to any mine in the kingdom. The cost of the new elevator and ventilator, and the engine complete, will only be about one-half the cost of engine winding apparatus, ropes, and pulleys now in use, while the working expenses and repairs will not be one-half of the present system. The men will be able to do double the work they now perform; and, instead of sallow faces and premature old age, we shall have a healthy mining population. Mines and collieries in the bowels of the earth will be as easy of access and as well ventilated and healthful as houses on the surface; and surely, with all these recommendations in favour of the new improvement, all parties should combine to have it adopted without loss of time. I trust this letter may meet the eye of the Government Commissioners, and that they will not only urge the adoption of the pneumatic in their reports, but recommend it to mine and colliery managers when they make their inspections.

The only thing now wanting to complete the emancipation of mining is a machine for sinking shafts, and another for driving tunnels and levels. I am happy to say that I have succeeded in finding a machine for sinking shafts. This machine will sink 3 fms. a day, at one-fifth the cost of manual labour, and in one-tenth of the time. All the machinery hitherto invented for sinking only bore holes for blasting, which is scarcely worth mentioning as an improvement. A. Alison.

## THE SOUTH STAFFORDSHIRE IRON TRADE.

Sir,—A letter under this heading appeared in the Journal of Oct. 15, from Mr. S. H. Blackwell, which calls for some remarks. Mr. Blackwell is, no doubt, well "posted up" so far as the iron trade of Staffordshire is concerned, but he is evidently at sea when he attempts to give information on the iron trade of France and Austria; while I think had he told the whole truth about the iron trade in the Grosmont Valley the Staffordshire ironmasters would have seen their case is not so hopeless as Mr. Blackwell would lead his readers to imagine.

Mr. Blackwell must know it is not all gold that glitters, and although there are three seams of ironstone in the Grosmont Valley, the upper vein 16 ft. thick, and two smaller 3 ft. thick each, still it takes *three very large tons of this ore* to make 1 ton of iron. In addition to this, the nearest coal field to the Grosmont Valley is from 50 to 60 miles distance, so if the ironstone can be obtained at a cheap rate, the cost of coal and coke for smelting, calcining, blast-engines, and the engines for raising the ironstone is rather an expensive item. In addition to this, the market price of the Gosmont iron only ranges about 10s. per ton above the price of Scotch pig-iron. The Wiltshire iron mines, if I am rightly informed, are equally distant from the coal as those of Grosmont, and the iron of a similar class. Notwithstanding the low price the Wiltshire ironstone can be obtained at, as far as I can learn the profit on making iron in Wiltshire up to the present time has not proved a very remunerative speculation. But when Mr. Blackwell states—here are his own words:—4. "The French ironmasters are delivering girders into London at the present moment at 3*l.* per ton less than South Staffordshire quotations to the same market," it is rather a startling announcement; but side by side with these statements we have the following quotations of the price of pig-iron both in England and France. French pig-iron at the works is quoted at from 4*l.* 12s. to 4*l.* 14s. per ton.. The Staffordshire prices of pig-iron at the same date are quoted as follows:—

| | | | |
|---|---|---|---|
| Common pigs | £3 0 0 | to £3 5 0 | per ton. |
| All mine | 3 0 0 | to 3 10 0 | „ |
| Better class | | 3 15 0 | „ |
| Shropshire (Lilleshall) prices—Hot blast | | 4 5 0 | „ |
| „ Cold blast | | 5 0 0 | „ |

In the face of these facts we are told the French makers can afford to make and deliver iron at 3*l.* per ton under the South Staffordshire manufacturers. I read the above paragraph to a French iron manufacturer now in London. He wanted to know if the person who made the statement was sane. I give his own words—"I think it is a great pity Mr. Blackwell did not go a little further, and tell us where we could get these said girders at 3*l.* per ton under the Staffordshire prices, delivered in London." This is a secret worth knowing. I see also by his statement that Belgium is underselling the South Staffordshire masters in the London market. I think if I were to analyse this statement, and ask also for the dates these said plates were imported from Belgium, it would be found as mythical as the girders from France at 3*l.* per ton under the Staffordshire price. Why, it was only last year that Lord Palmerston and Mr. Gladstone were exulting at the result of the "Cobden Treaty," and telling us that English iron was now imported into France in large quantities. The French papers only this week contain articles deploring the *ruin* of the French iron trade from the introduction of English iron at the reduced tariff; but all this seems changed, and the French can undersell us in our own market 3*l.* per ton.

Mr. Blackwell's second-hand statement (5), that his friend can get his rails from French makers cheaper than he could get them from England, I can well understand; but every person who knows what concessions for railways in France mean will admit that these contracts will not bear Mr. Blackwell's interpretation. Again, in Mr. Blackwell's statement there is a remarkable discrepancy as to the actual price of iron. It appears that the French masters can only undersell the English 40s. per ton in their own country, where they are protected by high Customs' duty, but they can afford to pay the carriage of their girders to London and undersell the English 3*l.* in England. These statements require some further explanation. In all my experience with Frenchmen, and speaking their language, I never found any one of them so ready to sell his goods under the market price. This makes Mr. Blackwell's statement very perplexing. But item 7 regularly takes the breath out of one; here it is—"*Austrian ship-plates* have been recently delivered in the Thames at lower prices than South Staffordshire masters have been willing to contract for." The ironworks in Austria are very few, and also very far between. If the said Austrian plates come from Styria they would, in addition to the cost of manufacture, have to come about 200 miles by rail and about 2000 miles by sea, while the price of fuel in Austria is so high that I scarcely dare mention the price of a cubic fathom of wood in Vienna. With all this we are gravely told that Austria can undersell the South Staffordshire masters.

If these Austrian plates did not come from Styria, but from Blansko or Witkowitz, in Moravia, the cost of the carriage must have been enormous, while the iron in Moravia is inferior in quality to the Steiermark or even South Staffordshire iron. Well, I suppose we shall have the Hottentots competing in the English iron market shortly!

But perhaps it may be new to Mr. Blackwell to be informed that so far back as 1843, when the Austrian State railways from Vienna to Prague and Vienna to Trieste were made, the Austrian Government gave all their orders for the rails for these long lines to the Austrian makers. The Archduke John's works, in Steiermark, made the rails for the Vienna and Trieste line; and the Witkowitz Ironworks, the property of Rothschilds and Co., made the rails for the Vienna and Prague line. I know it for a fact that the tenders from the above makers were double the price of the English makers who tendered for the rails. The reason given for this was that the Austrian Government wished to have the rails made in Austria, and on these grounds the English tenders were rejected. I am certain that there is not a single ironworks in Austria which can produce iron at anything like the price it can be produced in South Staffordshire. In Austria there is no competition in the iron trade. In France the competition is very trifling; it is only in England that a beggar-my-neighbour competition exists, and this competition keeps the iron trade elsewhere prostrated. As far as the iron trade in England is concerned, I can see no hopes of a permanent improvement; the trade is over done; it has found its level. With every improvement in the price of iron from fifty to sixty additional furnaces are put in blast. By the time these have been in operation a few months the markets are glutted with iron, and the trade is again prostrated. During the late high price of iron, a gentleman asked me if I thought the price of iron would keep up. I remarked, No; it was impossible it could be so; the make of iron at the time was over 30 per cent. more than the demand, and so it has proved. The trade has had a few months of prosperity, now to be followed by, perhaps, years of perplexity, as on former occasions. When the supply is greater than the demand, what else than low prices can be expected? How far the scarcity of labour, by emigration, will remedy the present state of things, remains to be seen. But to all appearance, more masters will be ruined than fortunes made before this labour question is solved.

As I have before stated, it is impossible to ruin a robust, hard-handed

workman; the whole world is now ready to receive him with open arms, but it is not so with the masters. Already we have lost 40,000 colliers and miners by emigration; if we allow competition and low wages to drive away 30,000 more of this class of useful men, the metal trade of England will be among the things that were. Competition has brought things to the present perplexed state; now the absence of competition on the part of the men will, perhaps, be the means of setting matters right again.

One word more in conclusion. Your Northumberland and Durham correspondent, from the remarks in his report, appears to be one of that class who are always moping, groping, and hoping against hope, for an impossible return of the past, when neither men nor masters had Unions. Our political agitators, when they wished to carry their points, have been in the habit of preaching to the men that "union is strength." The men have taken them at their word, and they appear satisfied that "union is strength." Perhaps your correspondent will explain the following statement:—"The sooner the old state of things can be brought about again the better, when neither party had a Union; and, consequently, a fair market value for labour was obtained." Does he not know that in the iron districts the old state of things reduced the colliers and miners' wages to something like 2s. per day? Has not the old state of things brought about the present perplexity with the workmen? Is it not the fear on the part of the men of the old state of things that has brought about the present Unions? If not, will he explain what the "old state of things" was? Your correspondent also states, "It is quite in vain to talk of masters and men agreeing to keep the prices up and sharing the benefit." I, for one, advocated nothing of the kind; and distinctly stated, in the Journal of Oct. 8—"*To guard against future strikes, let masters and men fix a minimum rate of wages, and a minimum price of coal and iron, for times of depression in the trade; this would protect the workmen and masters from the everlasting source of enmity caused by fluctuations in the trade and wages, and, so far as I can see, all interests would be equally protected.*"—A great many persons in the trade are now of the same opinion.—26, *Throgmorton-street, Oct.* 24. GEO. SHEPHERD, C.E.

## Mr. NICHOLAS ENNOR'S SYSTEM OF GEOLOGY.

### NO. XV.—VOLCANIC ERUPTIONS.

SIR,—Before I take up the subject of Volcanic Eruptions, I beg to call to your readers' notice that not one would-be geologist in a thousand is aware that all the earth works up and down in V pieces, as shown in my diagram, No. 13. I have to tell them it is a well-known fact, that it not only works up and down extensively, but that it also works horizontal. The celebrated Great Devon Consols lode is shifted horizontal 450 feet; I know some lodes shifted for more. Treburget rich lode was totally lost, and gone in the V piece; these shifts are ever-moving mountains north and south. Those men who collected at Bath appear never to have discovered this, but they appear to have run off wild after originality, so far as to even outrun Handel Cossham, so long celebrated for revealing wondrous things, but at Bath they would not even hear him commenting on the wonders of his native place. I say these men should have discussed the earth's great and natural laws at that meeting in preference to long shots, and have told the world how and when these pieces shifted up and down, and also horizontal. I could write a history on the earth's laws for some men to study, but it is useless to them, as it is evident these men have soared beyond the depth at man's command; but before they are wholly cast to the winds as lost or strayed geologists, I will yet give them another chance, by placing them back on the low or minor branches, to try their ground over again.

I next show a part section of a globe, for the purpose of calling attention to what these men say is the origin of real volcanic eruptions; they say they proceed from the interior of the earth, as this section, where they contend there is over 49,000,000 square miles of everlasting fire, and that every burning mountain has a hole in through the crust to this fire, as here shown at *c*. This I deny *in toto*. I contend that volcanic mountains originate from beds or layers of sulphurous and bituminous substances, found in layers similar to coal beds, and that the electric spark from friction sets it on fire when meeting it near the atmosphere. I further contend that it cannot possibly catch until it meets oxygen; it is like the gas in coal mines, which all know will not explode until it meets with oxygen, neither would these substances, be what they may, that produce volcanic mountains if oxygen were not present. I take the pieces here shown as 1, 2, 3, and 4; they are all beds of some inflammable substance, it takes fire, and burns to No. 2, where it is met by the right-hand fault, when it goes out. Let this layer be what it may, it must be shifted by faults, as coal beds are; this burns out, and lets in oxygen to the point No. 2 fault, and there it may remain dormant for hundreds of years before some fall or decay of rock takes place. This, again, lets air into No. 3, when it may again ignite and burn to the fault parting No. 4, when it may cease burning, and stop for a thousand years, or it may never burn again, or it may happen that the substance is all burnt and expended. Any mountain if once a burning one may commence to burn again; man cannot calculate when it may break out, it may do so any day. Then, we are also told of the great extent that these shocks are felt, and their direction. Then, I will suppose that matter after the last burning was cold in the hollow space at No. 2, then No. 3 began to burn, the space at No. 2 was nearly full of the old cold lava left from the last burning, the fire again rekindled at No. 3, and burning extensively, what would be the result if the hole at No. 2 had let in air sufficient to assist and kindle the fire, and cause it to burn rapidly, and this hole, though sufficient to let in air, was not large enough to give it vent, then what could we expect would be the result? Why, all practical men know that a single pound of powder confined in a hole causes the earth to apparently tremble for hundreds of yards around. Then this volcanic charge is nothing more than a large hole charged with more powder than is in possession of all the nations on the earth, the fire having caught it, it burns, and will have vent; if the hole at No. 2 will not give way, it will break up at *o*. The ancients tell us of the breaking out of one of these eruptive mountains which made the whole earth vibrate. I have no doubt that what they say is quite true, and as to the direction of the shocks, I think they are recorded to generally range about north and south.

This I do not dispute, as the north and south lodes, or the artery of the earth, would carry it in that direction; then all the current of electricity is disturbed, and a rush may take place to equalise or balance the disturbance. We must not be surprised at seeing briny and red water bursting from the earth after these disturbances, as all the springs passing through the veins that fall within the range of such terrific shocks are disturbed, and some of these large arteries must pass near the line of action, such as the veins shown at 1, 2, and 3. There is one thing I do not believe in, which is that not one of these fires ever commence to burn under water. After they have taken fire they may burn to a great depth, and even for miles under the sea, where there was no more water than it could convert into steam. We are told of some of these fiery mountains bursting up in the sea; it is quite possible for them to do so. Should the passage be stopped as before stated, at No. 2, it might burst up at the surface at *o*, over No. 3, and not go out; that is, if it threw up lava enough to form a ring above water, and this *o*, over No. 3, might become the place of future discharge. We find if a coal mine takes fire it can be put out by letting in a sufficient quantity of water. This would be the case if the sea broke in, as we never find it to break up again in the same place in the sea if no hill of lava be formed above water. If your readers look at the section in last week's Journal they will find all the holes go through the earth's crust. In that case man is in danger every hour he lives of two evils—first, that all the water may run into it, and deprive him and all creation of future nutrition; or it may cool the interior to such an extent that everything might die on the globe for want of heat. The fear of either of these things occurring do not alarm me, as I do not believe in these fiery theories.

I notice that many of their volcanic mountains are shown to come up through granite. One they show as now burning is coming up through granite; all the hill is granite to the very top. Having never seen a burning mountain in a genuine granite, will they oblige me by informing me where the one they now represent is situated? Is it Mount Etna or Vesuvius? If neither, will they inform me which one it is? I am not particular as to distance; I will go to see it and judge for myself. I next call attention to the mountain here shown, *c*, as supposed to be the one shown in the section; it is shown to be discharging from the interior up through the hill. This hill is shown as granite; the discharge is also granite. If this is true, and they can show it, I want no further proof, the point is settled; but I very much doubt their pointing out a burning mountain ever coming up through genuine granite. As to its throwing out granite, it is only one of their many fabulous assertions. It is the very thing that must condemn them. No such thing is to be found on the earth.

I do say it is infamous for the paid and leading men of England to get up and sell to the public sections or plans of volcanic mountains, with the fire coming up through granite, and the lava genuine granite, as they have shown in their section, if not true; if true I only ask them to point out the very mountain. It will have its due effect with me when I see it, and it must go very far to exonerate them. Passing it as being granite for the time, I will suppose a coal bed were below, as shown at No. 9-10; the force required to drive a passage up through would have disturbed all the layers of rock through the earth's crust, and this coal and every other layer must have stood as here shown. Then, I ask if this is as coals are now found? Coals now worked are generally found to head down, not up. I next notice the hill, *b*, called clay-slate. I care not what it is, it may be even called any rock found above coals for our guide here. This mountain is lifted by some interior force said to be connected with the interior fire, but it never had a hole through. Had Vulcan sealed it up in this case every lode or vein in the hill must have been destroyed, and no metal would be found; and the coals would be diverted from where they are now to be found, as here shown. Had these fiery holes ever existed they must have set all the coals in the earth on fire and consumed them thousands of years since. All coal miners know to their sorrow that coal beds will burn if they let fire and air get hold of them. If what the Bath men say is true, and the globe was a ball of fire for 9,000,000,000 of years, where can they pretend to show the coals now in the earth come from? Neither coals, water, or any evaporative substance could have possibly been left in the earth; it would have been left only as a dry cinder for man to be placed on. Then, I ask, where the sea and all the sedimentary layers, with coals, and all the metallic substances, came from, to re-form the world as now found? The very shells as we see them prove that all these substances were formed under water, and to me there cannot be a doubt but the bottom of the sea was turned up when the deluge took place. I leave this for a time for the Professionals to meditate on, and beg them to try their ground over again. Facts are stubborn things, but we must get at them. I shall never leave them till they or I find a far more feasible basis to found geology on. Their long-winded shot will never kill me. It may wing a few half-bred Practicals and old croakers, but facts will prepare Practicals to carry the victory.

As a summary guide to your readers as to my views on the earth's formation, and its working action, I venture to make the following remark:—First, I assume that God made the earth with no other view than to place man on it. To carry this out, he formed it a complete finish—a perfect model—a type of beauty, with its arteries, veins, and ligaments, and every other thing requisite for its perfection. Working electricity was passed through it, which is the life of all creation; this gave it motion, and it revolved as a finished structure. I further argue that the earth never was a mass of fire, neither does a perpetual fire now exist in the earth. I contend that electricity is the only acting fire. Electricity is ever present in every portion of the earth, watching and aiding to form life in every new-forming substance. Electricity is the origin of what man calls chemical action; it brings up heat to the required point to form every substance, but rarely produces fire. Heat 10° too high or too low destroys life and animated nature. If by an over-friction it becomes fire, all life is at once extinct, and the substances are reduced to their origin. Such fire burns only as long as the inflammable fuel lasts; it then goes out of its own accord. This globe, by the aid of electricity, is self-acting. If a single link goes wrong, electricity and nature repair it. This is a point man will never attain. I believe the earth turned a quarter round at the deluge. It may be essential for the formation of rocks that something should turn the earth purposely to destroy a large portion of the inhabitants, and to reproduce new layers of rocks under the sea. Who can tell us that man will not ultimately multiply on this earth so as not to find room for his support? These are things that man has no knowledge of, or power to control. I have one letter more to come on the formation of a few other rocks, and one on the utility of the Bath professionals and the Mining School teachers; then one on the United Mines hot water. The metamorphic system, and the change now going on in the rocks we walk on, have been very well handled by my friend Mr. Salmon, but I will go into it on some future day. N. ENNOR.

## WONDERFUL FALL OF TOADS.

SIR,—It is contrary to my rule to notice remarks from any quarter until my letters are completed, but seeing Mr. Alison's "New System of Geology" in last week's Journal, I cannot resist making a few comments. I fear from his remarks that he has only read one of my letters; in that case he can know but little of what I have written. If he reads my letters through he will find I have distinctly stated that I believed the earth was formed from gases, and that everything is now producing from the earth, air, and water; and that the heavens and the earth produce all things. As to Mr. Alison's new creation, it is beyond my comprehension; still I am mystified to discover why there should be such respect paid for toads as to preserve them in the rocks ever since the world was formed, in preference to every other thing created; and now, to again form a new lot, Mr. Alison may tell us where they were formed or generated—was it in the heavens or was it in the moon? I fear Mr. Alison is wrong in his interpretation as to toads being sent down from heaven. Had he stated they were Sir Charles's dead men's bones, old stone hammers and arrow-heads, or Sir Roderick's delightful shells, that they fired away at Bath, by such extra long shots, again returning to the earth, I think he would have had a far better argument; he would then have had ground to argue that these toads were generated on the earth, and the spawn was in the shells, and they were hatched during such a long passage in the air, where the silex and bones were converted into shells, to protect them. He tells us of other new beings coming down shortly in the same way. What can Mr. Alison mean by this? Is he going to collect all the professionals that attended at Bath, and make a full charge of them for one of their long guns; if so, he must call in Mr. Handel Cossham, whom they slighted at the meeting, and let him fire them off, he taking care to give them a sufficient charge of powder to send them clean out of England, as they may come down dangerous beings for we Englishmen to cope with. N. ENNOR.

## MINERAL DEPOSITS OF SOUTH WALES.

SIR,—The letter signed "H.," which appeared in the Journal of Oct. 15, respecting the Taibach Mine, must have been very amusing to your readers. I am much pleased to see that he has been so fortunate as to procure one of the tremendous long guns stated by Mr. N. Ennor to have been used at the Bath meeting. "H." has loaded his gun with all kinds of materials—directors, railway contractors, mining captains, coals, sandstone, vein-spar, and shale—and has fired a shot about 100 miles long; but he tells us that the gun was overloaded, and has, consequently, gone to pieces, which must be a great loss to him, having missed his mark. As "H." is not a practical man, it will be but a waste of time for me to attempt to discuss matters with him; but as I have had 33 years' experience as a practical miner, I may be allowed to know the class of rocks that will be found productive of ore, and the properties those rocks should contain to be rich in minerals. I may belong to the class of men that "H." alludes to as not knowing clay-slate from sandstone or shale; but although I have had but 33 years' experience, I can distinguish the difference between barren and productive rocks, and do not form my ideas of such matters from supposition, as "H." evidently does. I would like "H." to visit our Cornish and Devon lead mines, when I would prove to him that our dividend lead mines are for the greater portion of them found in soft clay-slate, of the same composition as the rock found in the Taibach Mine.

I will, however, confine my remarks to South Wales; and I invite "H." to travel with me through the country. I had no wish at the onset to deal in personalities, neither to interfere with Captain Waters or his privileges, as I have no doubt that he is a good miner; but "H." has compelled me to do so, he having alluded to one solitary mine, which I conclude to be the Vale of Towy, as it is the only mine now in existence near to that place. I now take the liberty to ask one or two questions, which I hope "H." will be kind enough to answer. First, will he state the reason why Capt. Waters put a stop to the two mines adjacent to the Vale of Towy? Was it because they were in shale or sandstone, or was it some other motive that induced him to have the materials drawn to surface? Surely it is not shale both north and south of the Vale of Towy. I have inspected those mines at surface, and they are not in shale, but there are to be seen some beautiful specimens of gossan and lead ore, and are a legitimate undertaking for a company, if properly managed. Now, Sir, please to accompany me to the Llanpumpsaint station. As to the bed of shale, I decline at present to give any opinion, as I have already done so; but I must ask one or two questions with regard to this place, which I trust "H." will answer. First, you say that you have lately been there, and that it is shale. Now, near this station there are to be seen two large flookan lodes, with two well-defined walls, and underlying about 2 feet in a fathom. This is indeed strange. Was there ever a lode known to exist in a bed of shale? I think not. Now I will go with you to the mine, and, if you please, examine the lodes and workings. The lodes are large and well defined, having their bearing about 20° south of west, underlying south about 1¼ ft. to the fathom. An adit level is driven south-west through a beautiful channel of clay-slate, highly mineralised. This level is very nearly parallel with the lode, and there are yet some 4 or 5 fms. to drive to reach the lode, and which "H." states is 26 fms. beyond it. Now, if my memory serves me right, the mine was dialled by an agent of the neighbourhood about twelve months since, whose name I at present decline to mention, and that which he calls the lode is not so, but branches running north and south. This person was not the right man to be entrusted with the dialling, as I believe that he had something to do with the Vale of Towy Mine. Now, as you have alluded to the mine lately worked by Messrs. Knight and Manders, which adjoins the Taibach, I beg to contradict your statement concerning it, as I am most credibly informed that they intend at once to erect machinery for the proper development of the mine, and to work it with spirit.

Now, I will accompany "H." to Cardiganshire. Taking our stand at Aberavon, there is not a mine to be found within twelve miles of it, and there is also not a solitary mine to be found within five miles of Aberystwith. And as he says the district is divided into six parallel zones, will he show to the readers of the Journal those zones that are productive? I know the Bronfloyd, the South Darren, and the other mines in this district, and am well acquainted with the nature of their lodes. They are in the same class of rock as that found in the Taibach Mine. I trust "H.," in his next letter, will show us the difference which may exist between the two places I have named, as it is, he says, only in the cleavage that the difference exists between the barren and the productive rocks. This I trust he will do, for the good of his country.

I shall not reply to any more of his anonymous writings, as he has thus far asserted things that are not truthful, and will not bear investigation; but if he will appoint the time, I will meet him on the mine, with any practical man, and will there disprove his assertions. I trust this will be the means of bringing some practical men on the ground, so that every assertion I have made respecting this mineral property may be fully corroborated. It will give great pleasure to your readers, as it has to me, to observe, from the Journal of Oct. 15, that the discussion upon the Taibach Mine will, without doubt, induce someone to explore this neglected and maligned district, which will most assuredly be found one of the most remunerative of the lead-bearing districts of South Wales, if properly laid open and worked.—*Oct.* 19. E. H. DINGLE.

OLD WHEAL NEPTUNE MINING COMPANY.—The application made by Mr. J. Harris, for the purchase of the machinery of this mine at a valuation, was heard before the Vice-Warden, at 79, Grosvenor-street, London, on Oct. 20.—Mr. PULBROOK said that, before Mr. Harris's application was heard, he had to apply to the Vice-Warden to convene a meeting of the creditors and contributories of the company, pursuant to the Act, to consider the proposal of Mr. White, to immediately pay of the debts of the company, and save the heavy expenses being incurred. Thirty shareholders, representing upwards of 4000 shares out of 7000, the number issued, had issued a requisition for the meeting, and he had letters from nearly every creditor of the company, Cornish and otherwise, approving of the course. Mr. Polkinghorne, one of the liquidators, had refused to call the meeting.—The VICE-WARDEN said he thought he ought to proceed with the business of the day, and the calling a meeting would incur great expense. He would take a note of the persons appearing.—Mr. Hook (of the firm of Hook, Street, and Co., agents for Mr. Cock, Truro), appeared for Mr. Harris. Mr. Rowcliffe, of the Equity bar, appeared for Mr. Polkinghorne, one of the liquidators.—Mr. PULBROOK objected to any one appearing on behalf of a single liquidator, they must appear jointly.—The VICE-WARDEN said that was a question of costs hereafter.—Mr. Pulbrook, And I intend to argue it too.—Mr. White, the other liquidator, appeared in person, and Mr. Pulbrook on behalf of the chairman and other large shareholders in the undertaking.—Mr. HARRIS produced the counterparts of the leases with the company, which he stated he had revoked, in consequence of the company not having worked the mine, and he claimed the right to purchase the machinery at a valuation. Two valuers had been appointed, one by the Court and one by himself.—The VICE-WARDEN said he had received no valuation at present, consequently he could not decide about that to-day.—Mr. WHITE, the liquidator, said he had at some inconvenience attended personally to-day, with a view of saving expense. Respecting Mr. Harris's claim, he could only call the attention of the Vice-Warden to the entries in the minute-book, by which it would be seen that the shareholders had questioned Mr. Harris's right: he had asked Mr. Tindell, the company's solicitor, to attend, who would explain anything his Honour might wish to know.—Mr. TINDELL stated the shareholders complained that Mr. Harris had granted underleases instead of assignments of the original leases, which equity would have compelled him to do, consequently they felt he was taking advantage of a proposition he was not entitled to.—Mr. PULBROOK said Mr. Harris ought to prove the right of forfeiture had accrued.—Mr. HARRIS objected to Mr. Pulbrook appearing.—The VICE-WARDEN said that gentleman represented a large body of the shareholders, and he should hear his remarks. After further discussion, the Vice-Warden declared that the right existed in Mr. Harris. Upon his asking that his costs be paid by the company, strong opposition was raised to it by Messrs. White, Tindell, and Pulbrook, and the VICE-WARDEN said he should reserve the costs.—Mr. PULBROOK renewed his application for a meeting, which was objected to by Mr. Harris, who the Vice-Warden stated, as landlord, was entitled to consideration.—Mr. WHITE asked that the books of the company might be handed to him for examination; he could not spare time from his business to proceed a distance of two miles each time he wished to inspect them.—The VICE-WARDEN would consider the matter.

# Meetings of Mining Companies.

## PORT PHILLIP AND COLONIAL GOLD MINING COMPANY.

An extraordinary general meeting of proprietors was held at the London Tavern, Bishopsgate, on Tuesday,—Mr. J. D. POWLES in the chair.

Mr. C. H. FIELDER (the secretary) read the notice convening the meeting.

The CHAIRMAN said that this meeting had been called for the purpose of obtaining from the shareholders their ratification of the terms of an agreement which had been entered into between their resident director, Mr. Bland, and the Clunes Company, for the purpose of joining the interests of the two companies, and placing them under the sole management of the Port Phillip Company. That was an object which Mr. Bland had long been desirous to accomplish, and for the following reasons:—At the outset of the agreement between the two companies it was arranged that the Port Phillip Company should receive 3*l.* per ton for crushing all the ore raised by the Clunes Company, the latter being bound to deliver all the ore which was raised. That arrangement went on very well so long as rich ore was produced, but when it became poorer—as in all mines it was sure to be occasionally—the Clunes Company could not afford to raise it, and, therefore, allowed it to remain in the mine, which did not satisfy the purposes of either party. It was then agreed that when the quartz yielded precious metal below a certain standard the charge should be reduced. This temporary arrangement went on for some time, until, in 1862, an agreement was come to that after paying a royalty and making an allowance for delivery of the quartz, the profits should be divided. That went on very well until, as the works of this company became more extended, and the crushing power increased, larger supplies of quartz were required. Mr. Bland had again and again lamented that he had not a control over the mine, so as to raise the lower quality of ore, which could be profitably reduced. A few months since Mr. Bland agreed to a sliding scale—that when the ore did not yield more than 6 dwts. per ton the Clunes Company should receive half, and 4*s.* per ton; when it yielded 8 dwts., the allowance was reduced to 3*s.* 11*d.* per ton; when 8½ dwts., to 3*s.* 4*d.*; and so on up to 15 dwts. per ton, when the allowance was reduced to 1*s.* 6*d.* per ton. That led to the conclusion that it would be very much better for the whole management to be placed under one hand, so that it should be advantageous to both parties to extract the whole of the quartz from the mine. (Hear, hear.) And the consequence was that Mr. Bland, anxious to get the question settled, agreed upon the basis of terms only the night before the departure of the packet from the colony, and had to dispatch a special messenger down to the port, in order that no time should be lost in forwarding the terms of agreement to the executive in England. The terms were that 7*s.* in 1*l.* of the available profits should be paid to the Clunes Company, and 13*s.* to the Port Phillip Company, the Clunes Company to pay their own directors, and the Port Phillip London board and office expenses to be paid by the Port Phillip Company; the plants now erected belonging to each company to remain their respective properties, and to be kept up and in repair at the cost of the general fund. In case of addition to the plant, the same to be the joint property of the two companies, in the respective proportions in which the profits may be divided. Stocks of materials in hand belonging to each company to be valued, and the amounts placed to their respective credit in the general account; the balance due to either company to be paid out of profits in instalments as may be agreed upon. The management to be in the hands of the Port Phillip Company. The Clunes Company to appoint a board of directors to visit and inspect the mine, and meet the general manager to receive his report and explanation of work done and contemplated, and offer any suggestions in respect to it, and to have the power of veto on any important question, such as sinking the main shaft a further depth, or the erection of more stamps. In case of any difference of opinion on these points, the same to be referred to the London board for their decision. Minute-books to be kept of proceedings of meetings, and a copy sent to London. The manager to furnish the board with an account of receipts and expenditure monthly, and declare the amount he considers available for dividing; the proportion coming to the Clunes Company to be handed to the directors for division amongst the shareholders. The books to be audited half-yearly; the sum of 400*l.* of the present salaries of the managers not to be charged in the account of expenses. The agreement to remain in force during the continuance of the lease. The new boiler sent for by the Clunes Company to be erected at their expense. In case of a vacancy in the appointment of the manager of the mine, the general manager to consult the Clunes board before appointing a successor; and in case of objection on their part as to his fitness, a temporary arrangement only to be made, pending a reference to the London board, if thought necessary. The Clunes directors to be at liberty to visit the Port Phillip Company's works at such a time as may be agreed upon with the general manager. This agreement to be subject to confirmation by the shareholders of the Clunes Company and the directors of the Port Phillip Company in London. He (the Chairman) mentioned that the lease of the mine extended for fourteen years from January last. When the contract was first entered into that 3*l.* per ton should be received by the Port Phillip Company, the cost of crushing was something like 30*s.* per ton, so that they then made a profit of 30*s.* per ton; but Mr. Bland had been enabled, by successive economies introduced into the management, to bring the cost down to 6*s.* per ton. Therefore, having a lower cost to contend against, Mr. Bland had been enabled to meet the appeals made by the Clunes Company. The directors had always urged the necessity of acting towards the Clunes Company in a just and liberal manner. Having read some extracts from Mr. Bland's last letter, the Chairman concluded by moving—That this meeting, having had under its consideration the memorandum of the terms of agreement entered upon between the Port Phillip Gold Company and the Clunes Company for the joint working of the mine and machinery, bearing date Aug. 25 last, and signed by the resident director of this company, Mr. Bland, on the one part, and the directors of the Clunes Company on the other part, hereby authorises the directors of this company to ratify the same by an agreement or deed duly drawn up, with any modifications of such arrangements as the directors may think proper to propose.

A SHAREHOLDER said that the general object of amalgamation was to economise expenditure; but if he understood the Chairman correctly, under the proposed amalgamation of these two companies the expense of two boards of directors was still to be maintained. He wanted to enquire whether it was really necessary to have two full boards, and thus incur a large expenditure inconsistent with the advantages of the amalgamation?

The CHAIRMAN said that one effect of the amalgamation would be that Mr. Bland would be able to introduce some considerable economies in the management. Although it was true there would be two boards, yet each company would defray the expense of its own directors. The Clunes Company had its directors upon the spot. The effect of the amalgamation would be that larger quantities of ore would be supplied to the stamps—indeed, he believed that some more stamps would be required. Every additional stamp-head tended to reduce the cost of reduction.

A SHAREHOLDER hoped no liabilities would be taken over by this company.

The CHAIRMAN said the Port Phillip Company was liable for nothing with respect to the Clunes Company. The only arrangement was that the profits should be divided in certain proportions.——The motion was then passed unanimously.

Mr. RAE said that although the business of the meeting was concluded, and nothing further could be done on the present occasion, still he should like to elicit the opinion of the shareholders present, on the question whether it was desirable that the company should be registered with limited liability. With all deference to the committee which was appointed to consider the subject some time since, he (Mr. Rae) felt sure it could be done. Since that committee considered the question, circumstances had very materially changed. At that time limited liability was a new thing to commercial men, and they were not disposed to look at it favourably, and legal men saw difficulties in registering established companies under the then Act. But now-a-days both legal and commercial men agreed in thinking that there was no better principle than that of limited liability. The last Act afforded every facility and means for the registration of old companies, under charter or otherwise, with limited liability. Under these circumstances, he urged the desirability of this step being taken by this company. (Hear, hear.)

The CHAIRMAN said that Mr. Rowden, the company's solicitor, was present, who would give his opinion upon the subject. As far as the directors were concerned, they had not the slightest objection to the step suggested being taken, if it could be legally done.

Mr. ROWDEN (the solicitor) explained that it would be necessary to legally dissolve the present company, it being under a charter.——Mr. BOYLE wished to know if there was any difficulty in the way?—Mr. ROWDEN said the difficulty was that the sanction of every shareholder must be obtained. The question was discussed at that time, and he took counsel's opinion upon it, which was to the effect that the company would have to be dissolved.

A SHAREHOLDER said all that was required to be done was to summon two special meetings, at which, in the one case, three-fourths of the shareholders present must assent to the propositiou; and in the other case, a simple majority was required. The solicitor would then have to go to the registrar, and present certain documents, and the certificate of registration would at once be given.

Mr. ROWDEN did not say it was not practicable. The difficulty in dissolving this company was the outstanding scrip shares, which were to bearer. If he were so instructed, he would again obtain counsel's opinion upon the whole state of the case, which could be placed before the shareholders at the general meeting, in January.——Mr. COBBETT (a member of the committee referred it) said that since the time that committee enquired into the matter circumstances had materially altered, and the only thing that could now interfere with the object being attained was some of the clauses contained in the company's charter, but, perhaps, that could be got over.

Mr BOYLE said there was a difficulty, inasmuch as they would be dealing with scrip. He thought the Act required that notice should be sent to each shareholder, which could not be done, seeing some of their addresses were not known.——A SHAREHOLDER enquired what number of shares were now outstanding.—The SECRETARY: About 890.

It was eventually agreed that the solicitor should obtain counsel's opinion upon the subject.——A vote of thanks to the Chairman and directors terminated the proceedings.

## NEW BIRCH TOR AND VITIFER CONSOLS MINING CO.

The quarterly meeting of shareholders was held at the offices of the company, Copthall Chambers, Throgmorton-street, on Tuesday, Mr. JOHN BAYLY in the chair.

Mr. WALTER THOMSON (the secretary) read the notice convening the meeting, and the minutes of the last were approved. A statement of accounts was submitted, from which the following is condensed:—

| | | | | | |
|---|---|---|---|---|---|
| Balance last audit | £ | 96 | 3 | 4 | |
| Tin sold | 2406 | 3 | 10 | = £2502 | 7 2 |
| Dividend in June | £ | 450 | 0 | 0 | |
| Mine cost, &c. | 2008 | 16 | 3 | | |
| London expenses, &c. | 35 | 3 | 7 | = 2493 | 19 10 |
| Leaving credit balance | | | | £ | 8 7 4 |

Including the ore sold on the 25th, the balance in favour of the mine was 835*l.* 14*s.* 8*d.*

The report of the agents was read, as follows:—

*Oct.* 22.—Hambly's Shaft: The 48 west, on main lode, is worth 6*l.* per fm.; we would remark here that more important discoveries may be expected, as we are getting under the tin ground seen in the levels above. The lode in the 36 west is large and strong, yielding good saving work for tin. The lode in the winze sinking below this level is worth 6*l.* per fm. The character of the ground in the 12 west is very much improved, and the lode more compact, and such as to justify an early expectation of a productive and profitable discovery; this end is far in advance of any level in this direction. The pitches on this lode vary in value from 5*l.*, 6*l.*, 7*l.*, to 8*l.* per fathom.—North Lode: The 48 east is worth 5*l.* 10*s.* per fm., with prospects of further improvement. The 36 east is worth 4*l.* per fm. The lode in the winze sinking below this level is at present small,

but yielding good saving stones of tin. The lode in the 12 east is worth 12*l.* per fathom, and the lode in the winze sinking below this level is worth 6*l.* per fm. The lode in the new whim-shaft, sinking from surface (now down 11 fms.), is worth 20*l.* per fm.; this we expect to hole and complete to the 12 by the end of this month. The pitches on this lode vary in value from 6*l.*, 8*l.*, 10*l.*, to 12*l.* per fm. Lance's shaft is now 4 fms. below the 12, yielding good stones of tin; here a decided improvement has taken place in both the lode and strata, and we are strongly of opinion that important and profitable discoveries will yet be made in depth in this part of the mine; but for the present state of the money market, together with the low price of tin, we would advise the sinking of this shaft with greater speed. In conclusion, we would remark that during the past three months we have cleared a large portion of the deep adit to Hambly's shaft, and shall have let down all the water from the old mine to this level by Monday morning next, so that Dunstan's wheel will be again applied wholly to stamping. The extra cost of this work, together with the extension and improvements of the dressing-floors, is as shown below, and also the difference in the price of tin:—Labour cost in adit, three months, 92*l.* 5*s.*; materials, ditto, 35*l.*; use of wheel drawing water, ditto, 45*l.*; improvements on dressing-floors, ditto, 29*l.* 12*s.* 3*d.*; difference in price of black tin, ditto, 61*l.* 4*s.* 9*d.*; difference on profit, 263*l.* 2*s.*—W. Skewis, R. Trevarthen, J. Symons.

The Chairman congratulated the meeting upon the position of the mine, and upon its general prospects. Since the last meeting the clearing out of the deep adit had been nearly completed, and although it had occasioned a considerable outlay, it would ensure future economic development, as the water would be carried to the 24 from Hambly's shaft, instead of being pumped to the surface as heretofore; and the shafts had been made sufficiently large for the use of skip-roads, so as to discharge a larger quantity of stuff than with the small kibbles at present in use. Of course, like all in mines, the depressed price of that metal materially affected their profits, but, notwithstanding the agents expected that they would be able to make larger returns, and at least keep up the present dividends, and by still further opening the mine there was every reason to assume that larger dividends would soon be declared. From the want of house accommodation, a sufficient number of men could not be obtained to carry out extensive operations, but the building company established by the shareholders had commenced operations, and the cottages, now in course of erection, would afford accommodation to the principal agent and several miners during the ensuing winter; and at the commencement of the spring other cottages would be erected, the returns from which would benefit not merely the mine but also the shareholders, who had undertaken the outlay necessary for the building of the cottages. Notwithstanding the very dry weather, and the expense consequent upon the clearing the water from the deep adit, the returns of tin had been increased during the past quarter. Upon the adit being completed, eight more heads of stamps would be immediately applicable, and a larger quantity of tin stamped. The mine would be in a position to make large returns, the whole of the profits from which would be divided among the shareholders. He thought the meeting would agree with him in thinking that the prospects of the mine were of a most encouraging character.

The Secretary, replying to a question, stated that there had been 37 tons of tin sold during the past quarter, which had realised 240*l.* Taking into consideration the fact that since the last meeting tin had fallen 5*l.* per ton, the result of the quarter could not fail, he thought, to be satisfactory.

Mr. Bradley wished to know if a much further outlay upon the clearing of the deep adit had to be incurred?—The Secretary said he believed the whole of the expense had been incurred, and met by the returns from the mine. The main—indeed, the sole—difficulty against which this mine had heretofore contended was an inadequate supply of labour, arising from the circumstance that there was not upon the spot proper house accommodation. The shareholders, however, had wisely determined to erect a certain number of cottages, some of which were nearly completed; so that, the mine being placed in a position whereby it could be economically and energetically developed, and an ample supply of labour being at hand, it was not too much to opine that New Birch Tor, which, in the face of unusual difficulties and drawbacks, had divided, and was still dividing, profits among its proprietors, would, under a more economic and efficient *regime*, yield increased returns and profits for many years to come. Without making any invidious comparisons, he could not help remarking that it was an inexplicable anomaly that a mine like New Birch Tor, which was now, and had been for some time past, in a dividend-paying condition, should be selling in the market at such a price, when other mines, yet in a call-making state, were selling at five to six times the amount. He knew that they were taught to believe that "comparisons were odious," but at the same time it could not fail to be highly profitable to the mining public if they practically availed themselves of such evanescent contrarieties.

After some discussion, the report was ordered to be entered on the minutes, and the accounts were passed and allowed.——The Chairman said that the committee had fully considered the financial condition of the company, and, taking into consideration the improving position of the mine, were unanimous in recommending a dividend of 1*s.* 6*d.* per share, which would leave a balance to be carried forward to the credit of the next account of 385*l.*——A resolution to that effect was put and carried unanimously.

The usual courtesies having been passed, the proceedings terminated.

## LADY BERTHA MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, St. Helen's-place, on Thursday,—Mr. Upton in the chair.

Mr. G. Lavington (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed.

A statement of accounts was submitted, from which the following is condensed:—

| | | | | | |
|---|---|---|---|---|---|
| Balance last audit | | £201 | 6 | 10 | |
| Ore sold | | 142 | 5 | 3 | |
| Calls received | | 610 | 4 | 6 | |
| Received for carriage | | 27 | 13 | 7 | = £981 10 2 |
| Mine cost (three months) | | £744 | 19 | 3 | |
| Acceptance paid | | 100 | 0 | 0 | |
| Merchants paid | | 79 | 1 | 5 | = 924 0 8 |
| Cash at bankers | | | | | £57 9 6 |

Estimating the costs and returns for the current three months, the liabilities exceeded the assets by 543*l.* 9*s.* 11*d.*——The report of the agents was read, as follows:—

*Oct.* 25.—We beg to hand you the following report of the operations in this mine for the forthcoming quarterly meeting. In the 53, west of shaft, we are extending a cross-cut south of the level, for the purpose of proving whether we have another portion of the lode standing in that direction. The ground in this place is moderately easy for driving, with a little water oozing from the end; about 2 fathoms further driving will prove the point we have in view. The lode in the stopes in the bottom of the 41 west is over 3 ft. wide, composed of ore, quartz, peach, and mundic, worth of the former 3 tons, or 12*l.* per fathom. In the new eastern shaft, which is rather more than 2 fathoms below the bottom of the 41 east, the lode is large. We are at present only carrying about 2 feet of it down with us, which is composed of peach, quartz, mundic, prian, and good stones of ore. The ground at the present point of operation is rather harder than it has been. We have a pitch working in the back of this level, where the lode is about 2 ft. wide, composed of mundic, peach, and ore, worth of the latter 6*l.* per fathom. In the 30 east it affords us much pleasure to state that we have intersected the great cross-course; so far as seen it is of a very favourable character indeed. We have to this date cut into it about 4 ft., and have not yet reached the eastern wall; we find it is carrying its head some degrees to the east of south, and underlying west, composed of flookan, prian, mundic, quartz, spots of lead ore, and intermixed with yellow and black copper ore—a portion of the latter is saving work, letting down a large stream of water. We consider the intersection of this cross-course of some importance for the future of the mine. We would here remark that it was in this level (the 30 east) we some time ago had a course of ore, some 25 fathoms long, varying in value 20*l.*, 40*l.*, 60*l.*, and 70*l.*; it is, therefore, to be hoped that the lode, from the strong and healthy appearance of this cross-course, when intersected on the other side, may be found equally valuable. We have a lode in a pitch in the back of this level, 3 feet wide, composed of ore and mundic, worth of the former 5 tons, or 20*l.* per fathom. In the cross-cut north of the 10 east we have intersected a branch carrying quartz, peach, mundic, and spots of ore, and letting down a little water. In the tribute department the pitches, on the whole, are without any material change, having four in operation. The wheel, machinery, pitwork, &c., are all in good working condition. The number of persons we have employed in and throughout the mine is at the present time 54. We have a cargo of mundic at the quay ready for shipment to Swansea at once, computed 110 tons, and expect our ore returns for the next three months will about equal this. Our costs shall be kept as low as we possibly can, consistent with the proper development of the mine.—Capts. Harpur and Metherell.

The Chairman said that he had much pleasure in meeting his co-shareholders upon the present occasion, because it afforded him an opportunity of congratulating them upon the accomplishment of an object which they had had for some time in view—the intersection of the cross-course. There was every reason to hope that at the other side of this cross-course a large deposit of ore would be met with. He thought there could not be a divided opinion as to the satisfactory character of the report just read, and there could be no question that the mine now presented encouraging prospects. They had for their largest shareholder a gentleman who was no mean authority on mining matters, Mr. Peter Watson, who had for a considerable period confidently looked forward to the most important results being realised from the cutting of the cross-course. He concluded by proposing that the report should be entered on the minutes, and that the accounts be passed and allowed.

Mr. Steele seconded the proposition. It was unnecessary for him to refer to the improved prospects of their property, as they were fully referred to in the report. It would be seen that there was now not only the pitch in the 40, but they had one in the 30 fm. level, which would, of course, tend to increase the returns. This was a new feature, altogether independent of the attainment of the long-looked-for point—the intersection of the cross-course, the importance of which could not be over-estimated.

The motion was put, and carried unanimously.

The Chairman, referring to the financial condition of the company, said that the committee were of opinion a call of 2*s.* per share would be ample to carry on the operations. Although it was hoped it might not be necessary to expend the whole of the amount thus raised, yet the committee felt they could not ask for a less amount.

Mr. Peter Watson, in proposing the call recommended by the committee, stated that it was true, as stated by the Chairman, that he had for some time past confidently looked forward to the realisation of most important results by the intersection of the cross-course. He had based that opinion from having an intimate knowledge of the district, no less than upon the reports of several accredited authorities. Among others, he might mention Capt. Charles Thomas, who, in his report in 1859, says "a large cross-course is seen at the surface, which I consider to be a good inducement for resuming the driving of the 20." Agreeably with that view, a level had been driving for about five years towards this cross-course, which he need hardly say had caused a considerable outlay. Capt. Charles Thomas further stated that "in order to prove the eastern ground effectually a new shaft ought to be sunk; but by the use of a good air-machine the 20 might be driven to the cross-course by way of a trial." In accordance with that suggestion a new shaft had been sunk some 50 or 60 fms., which had cost a considerable amount of money. Capt. Charles Thomas concluded his report by saying that "the mine is opening up rather favourably, with ground for further discoveries near the cross-course." Now that this cross-course had been intersected they would soon see the result. Cross-courses were sometimes 1 ft. and sometimes 6 or 7 ft. wide; but if they had a cross-course from 4 to 5 ft. wide, as it was in this case, and, what was of the greatest importance, with ore in it, there were the strongest grounds for believing that at its further side an important deposit of ore would be met with. Even the uninitiated in mining would naturally enquire where this ore in the cross-course came from, and the more especially as up to that cross-course no ore was found; and the natural inference was that it came from a deposit of ore at the other side. Those familiar with mining knew that in connection with cross-courses some of the finest deposits of ore had been found, and, as in this case, when the cross-course itself was mineralised, a large deposit would no doubt soon be met with. Somewhat analogous to this circumstance was the feature recently met in the slide at Ivey's shaft in the Great Wheal Vor United Mines. The slide itself was mineralised, and when they got completely through it the lode became enormously rich. All they had to hope for was that a similar result would be realised at the further side of the cross-course in Lady Bertha. The cutting of a rich lode in the 30 was of the greatest importance, seeing that it was nearly a depth from surface of something like 80 fathoms, whence their explorations could be extended for many years.

A Shareholder enquired if the secretary would communicate to the shareholders the earliest information with regard to the cutting of the lode?—The Secretary said he should only be too glad to have the opportunity of forwarding to each shareholder the announcement of the accomplishment of such an important point.

A call of 2*s.* per share was made. The resolution of the committee forfeiting shares in arrear of call was confirmed, but if the arrears were paid by Nov. 9 the committee were empowered to restore such shares. A vote of thanks to the Chairman terminated the proceedings.

## TRUTH'S ECHOES, OR SAYINGS AND DOINGS IN MINING.

There has been a little more activity in the Mining Share Market this week, chiefly arising from transactions in connection with Great Wheal Vor, East Wheal Grenville, East Wheal Lovell, and a few others, in which a demand sprung up; but otherwise the market continues dull. The usual fortnightly account took place to-day; but the business appears to have been very light.

Devon Consols have been dealt in at present market price.—South Caradons have been in request and found scarce.—Wheal Seton and West Seton have been more than ordinarily quiet.—Nangiles have been dealt in at nominal prices, and since offered at lower rates.—Cliffords continue to command attention, and freely enquired for at minimum prices.—East Bassets are quiet at present quotations.—West Tolgus have been dealt in, but since offered at lower prices.—Tincroft shares are in good request at improved figures. Cook's Kitchen are heavy at market quotations.—East Carn Brea are enquired for at buyers' prices.—Wentworth Consols have changed hands at minimum rates.—West Chiverton and Chiverton are heavy at present quotations.—East Grenville and Wheal Grenville have been extensively dealt in, but fluctuations have followed.—Great Laxeys continue in good demand, and prices have advanced.—North Treskerbys are enquired for at nominal figures.—South Condurrows are more freely offered at lower rates.—Great Wheal Busy and Hallenbeagle have been in better demand, and prices have consequently advanced.—East Rosewarnes are enquired for at nominal figures.—East Lovells have been largely dealt in at higher rates, but left off with a weaker tendency.—Great Wheal Vors have shared largely in the transactions of the week at advanced prices, with every prospect of further improvement.

East Vors have also been in request.—New Rosewarnes are quiet at present prices.—Providence shares are sought for at lower rates.—East Caradons have fluctuated, but several transactions have been effected.—Marke Valleys and Gonamenas have changed hands at nominal prices.—West Caradons are enquired for at lower rates; some transactions have taken place.—New Wheal Marthas have changed hands.—Kelly Brays are sought for at buyers' prices.—Hingston Downs are in fair demand at improved figures.—Lady Berthas are enquired for, and several transactions have been effected.—East Russell and Wheal Crebor have been dealt in without any important change as to price.—North Devons have changed hands at nominal prices.—South Darrens have changed hands at quoted prices.

Devon Great Maria (formerly East Wheal Martha).—The recent discovery made by driving a short cross-cut, which intersected a large and promising lode, continues to look remarkably well. The most practical and experienced agents of the locality look upon the further development of the lode as likely to reveal an important and valuable discovery.—East Caradon: The caunter lode in the 60 east is poor; the 70 east is worth 7*l.* per fathom; the 80 east and west is producing saving work.—New Lode: The 60 east is worth 6*l.* per fathom; 60 west, 7*l.* per fathom; 80 east, 15*l.* per fathom; 80 west, 5*l.* per fathom. The 60 east, on south lode, is valued at 6*l.* per fathom.

Lady Bertha.—The improvements likely to result from the driving of the 30 east through the great cross-course have greatly enhanced the future prospects of the mine; and the cutting of the lode to the east of the cross-course is looked for with considerable interest, from the highly mineralised character of the ground.

North Devon.—Improvements are reported to have taken place both in the rise and the winze in the adit level on the caunter lode. All the other places of operation are looking as well as when last noticed. A large quantity of ore will be sampled shortly for the next periodical sale.

Wheal Trevenna.—The prospects here continue to improve as the ground is laid open. They are now 9 fathoms deep, and not yet down to the old workings. The lode where left standing is valued at 30*l.* per fathom for tin. At another point the work raised is equal to 5 cwts. of tin per 100 sacks. In the eastern deposit it is worth 2¼ cwts. to the 100 sacks. They have also intersected a very promising copper lode, 3 ft. wide, in the shallow adit, which is likely to become productive at a shallow depth. They have a large pile of tinstuff and some very rich work at surface, waiting for the completion of the dressing machinery, &c.

South Lovell.—The operations here are going on satisfactorily, and, so far as seen, there is every reason to believe that the lodes will be found valuable for tin, although they have not yet reached the point where the "old men" left off. From the immense run of lode taken away by the "ancients," there is no doubt as to what the ground will prove when fairly opened.

Margery is represented to have very considerably improved, and is likely to become a profitable and permanent paying mine. The returns have very much improved; and they will shortly sell, for the two months, 429 tons, being an increase over the previous two months of fully 150 tons. They are now making fair profits, and, with an improved standard with the increased returns, a dividend might have been expected at the next meeting. The mine has improved in several important points. James Lane.

From Mr. James Crofts:—It is very pleasing to record this week a decided improvement in the Mining Market, but such is the fact, there having been a good general business transacted in the last few days. This effect, sure to give place to gloom sooner or later, may be traced to the probability of money becoming cheaper, and perhaps wholly so, the same cause having operated to improve the tone of the Stock Exchange, whose operations in bank and railway shares have also become conspicuously good. It is to be regretted that such parties as were on the watch for the lowest point of the mining market, and believing it had not yet arrived, have missed the opportunity to operate, except at advanced prices. As, for instance, when Great Wheal Vor were to be had at about 28½, they were predicted as not unlikely to recede 20*s.* or 40*s.* more, instead of which they have advanced, at this present time of writing, to 35. Tincroft, the writer estimates, are just now in the position that Great Wheal Vor were—15 to 15½; and being one of the best dividend stocks on the market, an advance in them is not only probable, but imminent. East Wheal Lovell rose to 12¼, 13, and being now 10½ at the most, experience teaches that when any share from 7*l.* or 8*l.* rises 3*l.* or 4*l.*, those who had the courage to speculate at the lower price realise a profit, and thus intercept the tendency to advance beyond a moderate point. There is still good business to be done in these shares in buying, more especially should they still recede in value, upon the basis of the market improving every day; and in acquiring such shares as the above the great advantage should not be forgotten in the fact that they are always saleable and convertible into Bank notes at an hour's notice, in common with a large number of other stocks, unnecessary to particularise to those familiar with the market.

The following reply was given by the writer to an enquiry for shares in Bedol-Aur: "Some very important news was received on Monday last from Bedol-Aur, which has considerably influenced the value of the shares. At 70 yards deep in the mine they are at present operating upon a vein or lode that is called the 'Brynia,' and which likewise intersects another lode that is called 'Beili Gwyn,' at right angles, and at their junction a considerable body of ore will most likely be discovered, whilst the Brynia vein has already yielded 6 or 8 tons of lead ore, paying much above the monthly cost. The following is the report upon which these observations are based, received Oct. 24:—'Bedol-Aur is looking better than it has been. We think we have cut the Beili Gwyn vein, but cannot ascertain for a day or two. There is a branch of lead 2 inches wide, quite solid. We are not quite certain if this is the Beili Gwyn.'" Central Minera (lead) near Wrexham, and adjoining the Twelve Apostles Mines, has been in working order about ten years with various success. In 1860 it yielded large quantities of ore, and the shares (2500, limited to 5*l.* each, and 2*l.* 12*s.* paid so far) advanced to 6*l.* and 7*l.*, at which, and calls in addition, the majority of the adventurers still hold on. The ore has never failed, but, in consequence of want of machinery, of late the workings have been unproductive, and the management, at last yielding to an absolute necessity, have erected a steam-engine, now in full work; and, as it is believed that an important body of ore, running into the mine from the side of the Twelve Apostles, will be met with before long, the shares have been for some period eagerly sought for, but are scarce, and advancing, having from 30*s.* or 35*s.* reached 2*l.* 5*s.*, or more. The long acquaintance the writer has had with this property, and his frequent visits to it, enable him to predict that great success will attend the now energetic, and, it is believed, skilful operations, and that soon. Incidentally it may be stated that a large number of the shares have very recently been purchased by capitalists at Wrexham, where the management of the mine is located; and, unless the capacity of the *Cymry* mind for prescience of future events in mining science is underrated, the fact of their buying into Central Minera cannot be held otherwise than significant, and worthy of imitation, by speculators at a distance. Captain Harris, a first-rate lead miner, and attached to the successful dividend concern called Minera Union, has lately been appointed to Central Minera; and on p. 713 of the Journal, of Oct. 8, an elaborate and highly encouraging report appears from him, on which reliance may be placed, and will repay both perusal and study; whilst, probably, a further report will appear this week, and continuously every fortnight. The Union Mine is, of course, making regular sales of ore, and is a handsome, but quite private property, adjoining the Central also.

By way of amplifying the question of the value of East Wheal Vor, to which a brief allusion was made last week, reference may be made to the advance in Great Wheal Vor shares, the former having the old Wheal Vor rich lode in the shaft, which is represented to be "improving every fathom it is sunk upon, and already contains tin to the value of 7*l.* per fathom." These shares have been forced down by the late depression in the market to less than one-half of their first price, whilst its prospects, as a remunerating mine, improve every day. To the prudent investor in progressive mines, subject to constant calls, it will be satisfactory to state that out of the 6000*l.* originally set aside by the promoters as capital, about 5000*l.* yet remains in hand; a large adventure may be, therefore, made in this mine with the utmost safety. In Bryntail Mine a most important move has taken place by the appearance of ore in the 30 fathom level, and being already proved in the 20, there would appear to be a great mass of ore overhead from the 30 fathom level. Pending more definite news, all the shares offered at a moderate price, immediately disappear; and without being over sanguine, the writer believes he is justified in predicting that an advance of 100 or 200 per cent. may take place in these shares any day. East Grenville and Wheal Grenville, after running together in price, like a pair of horses in a curricle, have now parted company, the former taking the lead very considerably, East Grenville being quoted 7½ to 7¾, and Grenville 5⅞ to 6. There is, probably, good to be done in both, but the East is the decided favourite, and has become a capital object of speculation with the "jobbers." The reader of these remarks, who may be hesitating as to business in buying, may take a glance at the reports upon the state of the Money Market, from which it will be perceived that a reduction in the Bank rate of discount to 8 per cent. is imminent, the effect of which will be to generate a competition for good bills amongst the bankers (private and joint-stock), and so facilitate the reduction of the rate, the only item now wanting to produce confidence once more in British mines and all other marketable securities.

From Mr. Edward Cooke:—There has been altogether a better tone in the market, and a good deal of business done during the week. After such a dull period as witnessed during the past few months, no doubt there will be more activity observable in the latter part of the year, hence the present is a good time to buy into a few mines that show evident signs of success, and among those of the progressive class may be noticed South Darren, North Chiverton, Chiverton Moor, South Condurrow, Great East Lovell, Wheal Grenville, New Wheal Lovell, and East Wheal Vor. I consider these mines may now be bought into with safety, as they are all of the most promising character. East Wheal Vor shares have been dealt in to a considerable extent. Its proximity to that wonderful property, Great Wheal Vor, renders it a mine of very great interest. The large amount of capital in hand, between 4000*l.* and 5000*l.*, will be economically applied to the most important objects in the mine—the sinking of the shaft and driving the bottom levels. In a short time Smith's lode will be cut in the 60 fm. level. This is 30 fathoms deeper than it has ever been seen before, and it is highly probable it will be found to be very productive. This lode has already produced large quantities of tin in the upper levels; in fact, some 12,000*l.* worth. The prospects, therefore, of its proving rich in the 60 fm. level are very favourable. The great object, however, to be attained is the junction of the Old Vor lode and Smith's lode, at about 20 fathoms deeper. Judging from the character of the same lodes in Great Wheal Vor, it may be inferred that a large deposit of tin will be discovered. Whoever buys the shares now are not giving any premium, and they should be bought largely while at such a reasonable price. The accounts from Great Wheal Vor are still of an astounding character; I say astounding, because the facts justify it. It has been proved to demonstration that the lode in Ivey's shaft alone produced last week upwards of 7 tons of black tin, that sells at about 65*l.* per ton. The lode has been variously estimated at 500*l.* and 700*l.* per fathom, and becomes richer every fathom the shaft is sunk. This is approaching the value of the Old Wheal Vor lode during its richest period; every week's operation upon this rich lode adds immensely to the value of the mine, hence it is not to be wondered at that the shares have been in such great demand. The principal buyers have been, I believe, the executive, and among them are the largest and original holders in the mine. The low quotations of Tincroft shares have brought forward many buyers, who have in most instances been disappointed in finding sellers. I have it from the best authority that these mines are still opening up well, and even with the present comparative low price of tin the usual dividend of 10*s.* per quarter will be kept up.

Illogan Mine, that adjoins Tincroft and Carn Brea, should not be lost sight of by those who are willing to embark their money with the view of having a good chance of a large return for it. Of course, it would be premature to hazard an opinion as to the period when success may be attained. It may interest some of the readers of the Journal to know that some of the richest lodes in the district traverse this sett, one of which alone has returned some hundreds of thousands pounds sterling in copper ore. Illogan is divided into 6000 shares, upon which a call of 1*s.* or 1*s.* 6*d.* each is made every three months. The shares, owing to the general dulness which prevails, may be bought at about 20*s.* each, and any day a discovery may be made that would cause a rise of an equal amount. No one need be apprehensive about the responsibility of becoming a shareholder in this mine, beyond that of paying their fair proportion of its ordinary current costs. The manager of Tincroft is also the manager of Illogan, and he shows the great confidence he has in the concern by holding a large interest in it. Advices have been received at the offices of St. John del Rey of a very serious accident. Those of my readers who acted upon the hint I gave them some time since relative to these mines did well. These accidents occurring so frequently are much to be deplored. I fear, however, from the nature of the ground (it being difficult to keep open, even with the largest timber) that the future profits of the company will be of a limited character, although the mines are standing at a market value equal to about double the price of Great Wheal Vor. The fact is there are many parties holding shares in this company who never held a share in the mines of their own country, although they offer greater advantages, and are far more safe to invest in, than almost any of the foreign or colonial mines.

North Chiverton is still opening up well, with every prospect of becoming a very rich lead mine. The large quantities of blende in this mine, so rich for silver, would seem to indicate large deposits of lead in depth, and there really appears to be every probability of such being the case. This is another mine that cannot fail to pay anyone investing in it. Birch Tor has just declared another dividend of 1*s.* 6*d.* per share, or equal to 15 per cent. per annum on the market price of the share. There is scarcely any other mine paying so well. The shares are only about 35*s.* to 40*s.* East Lovell shares have been dealt in to a fair extent. The advance in price brought in a few sellers, and a slight reaction has taken place. This, however, can be only of a temporary character, as the returns of tin that will now almost immediately be made will prove that East Lovell is a very rich mine, and will give large profits to the shareholders. Whoever buys the shares will not regret it. The market closes firm, and the indications of a much cheaper rate for money will have a beneficial effect upon all kind of securities.

From Mr. Wm. Lelean:—I have, for some weeks past, been offering, each week, a few remarks, through your courtesy, on the aspect of our commercial and monetary affairs, and suggesting what appeared to me as sufficing reasons for believing that, although we were passing through a severe trial, we should not—at least from any causes now in operation—experience anything like what can properly be called a panic. I am glad to be able to say that each week, as it has passed by, has confirmed the views I originally entertained, for, in spite of more than the usual number of commercial failures, many of them brought about, either directly or indirectly, by the large speculations in cotton of a comparatively few persons, some of them with resources ridiculously disproportionate to the magnitude of their transactions, and the serious and sudden reduction in the price of the article, the trading and commercial community generally has maintained its credit, and has borne up with wonderful equanimity and success under the unusual pressure to which it has been subjected.

I believe it to be the duty of every man who has formed a judgment on this subject, after mature deliberation, and who has the means of making that judgment known, to do what he can to calm the public mind; and, instead of crying out that "we are in the midst of a panic," even now, when, whatever of disturbance there has been in the commercial atmosphere is demonstrably subsiding, to contribute, as far as he can do so, towards reassuring those who have been unduly alarmed.

That the commercial atmosphere has become much more serene than it was there is no room to doubt. The "screw," as the stringent operations of the Bank directors have been termed, is doing its work, and although many have been most severely pressed, and others hopelessly crushed, under its adverse weight, it is now evident that it was one of those sharp and painful processes which, like some extreme surgical operations, are necessary to preserve the life of the suffering patient. Money was not only being thrown away in expensive and useless enterprises—that is, as far as the national good was concerned—but it was being drawn away in large sums by two or three foreign countries. There was no alternative but to increase its price, and thus check its profuse expenditure. If 6 per cent. would not do, 7 must be tried, or 8 or 9; but even the highest rate charged for it could only partially effect its object, so long as other countries sold their money at a cheaper rate. It was not until the banks of France, Holland, and Spain followed the example of our Bank that the auriferous current began to flow back into its ordinary channels, and any considerable approach was made towards a more equable, and, therefore, wholesome state of things. The Bank returns, not only of England but of France, are beginning to assume a much more favourable appearance, and give good reason to hope that we shall not be long before money and money transactions will be much easier than they have been for some time past. The payment of the dividends, instead of reducing its reserve by the amount of a million, as it often does, reduced it by something less than 20,000*l.*; and not only has the drain of bullion been stopped, but the gold is steadily returning to us. People who felt and were looking very uncomfortable, under the influence of vague but distressing fears, are beginning to look cheerful, and some who in the excess of their apprehensions had unprofitably locked-up their money, are resuming their confidence, and—though, as yet, somewhat cautiously and hesitatingly—looking around them, to see in what way they can most profitably and safely employ it. To talk of being "in the midst of a panic" would be to commit a grave offence, if the absurdity of the statement did not render it innocuous. The evidence of the alleged fact is said to be, that "people who hold stock or shares in public companies are trying to realise at any sacrifice, while those who hold money will not part with it to buy shares at any price whatever; but the alleged proof is as destitute of foundation as the alleged fact it is said to sustain. At the time that these expounders of the mysteries of monetary science are thus striving to frighten people into the doing of what they are alleged to be already doing—selling securities of all sorts "at any sacrifice"—the evidences are conclusive of an opposite condition of affairs. "The gradual strengthening of the conviction in the mercantile world," says the *Times*, "that the existing pressure in the discount market, however trying it may be, involves, with few exceptions, no danger to any but purely speculative establishments, or such as have traded on a credit to which they never were legitimately entitled, continues to impart an improved tone to the English funds, which is assisted by daily investments on behalf of the public." In like manner the *Daily Telegraph*, although it has hitherto been disposed to take the more gloomy view of affairs, writing on Wednesday last, says—"The money market is daily becoming less stringent, the floating capital of discounters is being largely increased, and the public generally have greater confidence in the future, and the onward course of the present recovery is looked upon as almost certain." Still more assuring is the *Times* this (Friday) morning—"A favourable bank return was relied upon, and it will be seen that, although a slight diminution of the reserve is customary during the second week of the payment of the dividends, there has been the large augmentation of 450,160*l.*, together with a fair increase in the bullion. The improvement here, in conjunction with that of the Bank of France, leads to the conclusion that a reduction in the Bank rate of discount may be looked for almost immediately."

That this is the just view of our position, the money articles, as they successively appear in the daily papers, place beyond all doubt. Public confidence is gradually becoming stronger, and it will grow, as the special causes of the late trial through which we have passed are more clearly seen and appreciated. There is no more reason why persons having money they wish to employ should abstain from doing so, discreetly and prudently, because knaves have been on the look-out for plunder, and silly people have fallen into their hands, than that those who are hungry should abstain from eating because there are scoundrels, like those who have just been heavily sentenced at the Old Bailey, who send unwholesome food into the market, and short-sighted people are induced to purchase and consume it. If there are unsound and unprofitable speculations inviting them, there are also sound and profitable ones, and the sooner they avail themselves of the opportunity of obtaining them the greater their profits will be. In mining shares, there are some to be had in which there is no more risk than is attendant upon all commercial undertakings, at prices which will return a large profit, and there are others in which there is some uncertainty as to the result, but in which the probabilities are great returns far exceeding those ordinarily realised.

The Great Laxey has considerably improved during the week. The 110 is opening out again, and is said to be now worth 120*l.* per fathom, with every probability of soon recovering its former value of 200*l.* The 155 south, on the east lode, is worth 150*l.* per fathom, as is also the sump in this level. The 155 south, in the copper ground, is worth 100*l.* per fathom. They last week sold 300 tons of blende, at 3*l.* 9*s.* 6*d.*; and they have this week sold 100 tons of lead, at 25*l.* 2*s.* 6*d.*, and sampled 200 tons of blende and 12 tons of copper. Altogether, the mine never looked so well or promised so largely; and I advise that shares should be bought immediately, as, in my opinion, there is a certainty of their rising to 25*l.* in the course of next year. The Great Wheal Vor is reported, and I believe upon sufficient grounds, to be the greatest tin mine in Cornwall; and, although the shares are selling at a good price, they will, I have no doubt, go much higher. The East Wheal Lovell may, properly enough, follow the Great Wheal Vor; for, next to that mine, it is attracting great attention all over the district, as promising to open out a most valuable enterprise. The works which suspended the produce of tin for market are nearly completed, and, that being done, there will, I have no doubt, be a very considerable quantity of ore brought up, and a corresponding rise take place in the price of the shares. I need hardly add, therefore, that I urge their purchase without delay. The South St. Ives has commenced working, and they have already discovered some very good stones of tin. I have no doubt that a very few weeks will enable me to justify all I have said of the value of this sett.

The North Minera looks well, as the operations are pushed on, and the tributs pitch. In the bottom of the 15 west is still producing about 15 cwts. of lead ore per fathom. The Bedol-Aur reports are very favourable, and the altered state of the ground in the end of the 70 yards level, leads to the conclusion, that they are within a few feet of the Beli Gwyn vein, which will add considerably to the value of the shares. The Great Sutton Chiverton should certainly have a high place in the list of progressive mines, not less for the judgment and energy with which it is being worked, than for the very promising appearance it wears. I may still add to these the East Providence, the East Treskerby, the Bedford United, the East Laxey, the South Darren, the East Trelyon, the North Chiverton, the East Carn Brea, the Darren, and the Roskarne Consols, a few shares in any of which may, at the present prices, be confidently recommended as a good investment.

The Great Darren.—We have frequently called attention to the prosperous progress of the mines in Cardiganshire, a progress so marked that it cannot fail to arrest the attention of the mining community. Among the old mines now coming into dividends may be classed Bwlch Consols, Llawrewmbach, West Potosi, Llettynhen, Havan, Silver Mountain, Gothic Grogwinion, and important masses of ore have recently been found in the already profitable mines of Cwm Erfin and Bronfloyd. Of the character of the discoveries in these mines we will further converse on a future opportunity; meanwhile it is sufficient to say that they bear a great resemblance to the solid and permanent formations of ore that have rendered Cardiganshire celebrated as a county possessed of mines affording a security proved in most cases to be of 30 years' value. We have occasionally adverted to the great disco-

very of silver-lead ore in the bottom of the Great Darren Mine, we have now to observe that the new drawing machinery is fixed, and has for some days been in effective operation; we understand that it affords a power equal to the delivery at the surface of 750 horse kibbles per diem, or between 7 and 8 fathoms of ground, which at ⅛ ton per fm. would give a landing power of 100 tons per month. We are, however, well assured that the yield of the lode in the Darren Mine is 2½ tons of silver-lead ore for the width of the lode, or 1 ton per cubic fathom; this would give a value of 50*l.* per fathom as the produce of a lineal fathom of the lode, taking it at its full width, and a drawing power capable of raising 200 tons, or 4000*l.* worth of ore monthly. The apparent length of this rich ore ground, judging from its occurrence on the surface, seems to be 400 fathoms, which would render the mine for all practical purposes inexhaustible. There can be little doubt that Great Darren is again about to become the richest mine in the district.

CROWAN CONSOLS has been placed upon the Cost-book System. The largest shareholders in the old company, which, it will be recollected, was introduced to the public under limited liability, have cordially consented to the alteration, and they, with the directors and secretary, have taken the whole of the shares. Perhaps there are few properties so well deserving the attention of the public as Crowan Consols; and it is fully expected the shares will be soon absorbed by steady holders, as a permanent investment. The new company is in 2500 shares, so that a good course of ore in the 40 fathom level, and which is most fully exposed, will send the mine to a good price in the market. The mine is already supplied with materials, good working plant, and an engine and two boilers, and the surface works are well laid out. The position of the property is first-rate, and embraces lodes which have made immense profits. The lode in the 30 fathom level is producing good copper ore, and improving every fathom sunk. There is capital ample to carry the mine on for nine months without a call, should, indeed, any be necessary, as the sales of ore will materially assist the development. We may state that Captains Charles Thomas, Goldsworthy, Rowe, Carthew, Mr. B. Symons, and other first-class men, have reported most highly of the property; and the practical management will be vested in Captain Joseph Vivian. The working of the mine will now be prosecuted with ability and vigour. The names on the London committee are a guarantee that there will be no arrears of debts, and that all accounts will be strictly charged up—a practice we have always strenuously advocated as the very essence of the excellent Cost-book System. Crowan Consols now enters on its new existence with everything to recommend it, and it has our best wishes for its prosperity.

## FOREIGN MINES.

CAPE COPPER.—Sept. 13: The superintendent writes:—I am happy to say that when I last heard from Ookiep wagons were beginning to come in briskly, and I have little doubt that all the extraction from the mines will be taken away by the end of the year. You will be glad to learn that the *Croydon* sailed for Swansea on the 7th inst., taking 516 tons of ore, as per bill of lading enclosed. Since hearing of the selling of the *Croydon*, I have effected a charter of the Oldenburg brig *Hercule*, of 208 tons register. The present steamer takes 344 bags, 20 tons of ore, to your address, for which we enclose bill of lading. Captain Clemes, writing on Sept. 10, gives a favourable account of the mines, and states that the quantity of ore extracted in August amounted to 98 tons of 2000 lbs., from Spectakel Mine, and 422 ditto from Ookiep, which makes a total of 520 tons, and adds,—"We have now our dressing appliances in a much more extended and perfect state than they were, which, with the horse-crusher, answering remarkably well for its size, enables to prepare 100 tons per month now easier than 50 tons of ore formerly."

CAPULA.—Captain Bray, Sept. 6: I have already given my reasons for not having disposed of the silver from tortas Nos. 1 and 2, and now have the pleasure of informing you that torta No. 3 has assayed 20·80 marcs per monton; my assays were, as before advised, 16½ marcs of the common ore, but on removing from El Chico to this place I sent up to the hacienda some six bags of best ore I had at the house. These would have had some effect, but not so much. Unfortunately I cannot check this assay (made in Pachuca), as the last of my muffles gave out about three weeks since, and those ordered have not yet come to hand. It is to be regretted the bunches from which this Torta was extracted should have proved so small. We have a branch of ordinary ore (4½ marcs) nearly ⅛ vara wide in La Esperanza level, bidding fair for improvement. The good indications in Nuestro Amo east have not continued; it gives only an occasional stone of ore. Two men have begun to break ore in La Bomba workings—they broke nine bags last week.

PACHUCA.—Captain Paull, Sept. 7: Since my last, of the 26th ult., we have cut a lode, 1 vara wide, in the cross-cut south from Santiago level, letting out a great deal of water. There is a regular branch of quartz, 8 inches wide, with spots of blue ore, and branches of jabones, with a great deal of bronce, as usual; the remainder of the lode is composed of porphyry, intermixed with quartz; by driving the cross-cut 5 varas further we shall intersect another lode, on which there is a shaft west of the arrago. About 350 varas further east there is a shaft sunk by the Guanajuato Company, now closed at the mouth, which I believe to be perpendicular, to the north of which there are several small lodes, or, perhaps, I might better say, one very large lode, which was sunk with the intention of taking all the lodes at a good depth. A little to the east of this shaft there are two other shafts and two adits driven east; from some of them they got the metal they sent to Sanchez hacienda in 1828. As the shafts have now got water in them, I cannot examine them at present. If the company continues I would propose to open the mouth of the perpendicular shaft, and ascertain the depth, and whether there are any levels on the lodes or cross-cuts.

RHENISH CONSOLS.—G. Sweet, Oct. 22: I received your letter, with Mr. Darlington, at Bleibach, yesterday. The ground at Wright's shaft is just as it has been, and the north lode in the west end, at Wright's, is the same. The lode in the adit end, at Christiana, is greatly improving, and the ore in the end is precisely of the same quality as the good bunch of ore in bottom of the adit level. I trust in a short time to be able to report something very valuable at this point. We have had a misfortune at Christiana shaft, by breaking the windbore in two parts; consequently all the lift sunk to the bottom of the shaft. We have a new windbore on the mine, and I hope in two or three days it will be again put to rights. The lift in falling broke a short pump and matching piece. I ordered a new one at Runderoth yesterday, which will be ready on Tuesday next, when the lift will be again put in the shaft. In driving adit ends where there is no level above we can make no calcuation as to what ore the backs will produce; but, on a rough calculation, we may say—On Bleibach north lode, from 80 to 100 tons, and at Christiana from 50 to 60 tons; and if the lode at Fahrenberg holds 10 lachters above the adit level as good as it now is we can calculate upon 100 tons from there: total, 260 tons, or (say) 2600*l.* worth of ore; but you must conclude that this is roughly calculated, as it may be more or less. If we cannot raise 20 tons at Fahrenberg by the end of November we may be able to make up the deficiency at Bleibach. I sent to Mr. Lausberg a sample of Bleibach ore—a good stone—which produced, as you will see by the enclosed letter, 71 per cent. of lead, worth 16 grains to the unit of ore. I intend to open a shallow level on Fahrenberg now if possible. I will send the carriers as soon as possible to Cologne for the horse-engine.

SAN ROQUE.—C. Remfry, Oct. 22: I beg to hand you monthly report for September:—The shaft south of San Estevan has been deepened 10 varas 2 ft. 3 in., or, say, to the total depth of 29 varas. The shaft is sinking parly in old workings and partly in whole ground; the ventilation continues bad. San Estevan shaft has been sunk 4 varas 0 ft. 7 in., and being down to the required depth, we have in this month commenced a cross-cut for No. 2 level. No. 1 level, east of the said shaft, or, say, east of junction of north and south lodes, has been advanced 30 varas 2 ft. in old workings, which has reached from 1½ to 3½ varas under our level. We have now whole ground in the end, the old workings at this point only reach to the roof of No. 1 level; as we anticipated, the lode on the whole length cleared shows productive, as also the present end. The bottoms vary in richness, say, from 1 to 3 tons per square fathom, and the present end may be safely estimated to be worth 1 ton per fm. No. 1 level, west of San Estevan shaft, has been driven 4 varas 0 ft. 9 in. in an orey lode. At San Antonio we have advanced No. 2 level 6 varas east of said shaft; towards the latter end of the month the water began to come down with great force in roof of the level, and it is to be hoped that very shortly the effects of this drainage will be felt in the different winzes sinking below No. 1 level, on both lodes. In No. 1 level, west of San Antonio shaft, we have driven 9 varas 0 ft. 3 in. in a productive lode. As the whim is sufficiently occupied in drawing water and stuff from No. 2 level, it has lately been impossible to draw any stuff whatever from No. 1 level, so that there are several hundred varas of stuff detained in this level. We have decided upon sinking another whim-shaft, about 50 varas of San Antonio shaft: the said shaft is sinking in old workings, and has been deepened 8 varas 1 ft., and, as soon as a communication is made to No. 1 level, we shall be able to command the drawing with ease, and, consequently, be able to stope the ground away already opened out by No. 1 level at San Antonio shaft. The winzes sinking below No. 1 level have not progressed very much, and are all down to water line. The 50 fm. level end, west of No. 5 shaft, has been driven 16 varas on a rich lode; the end, in the present month, has diminished in value, after having laid open a very good course of ore of about 22 varas in length, worth from 1½ to 3 tons per fathom; subsequently, in the last week, the lode has again improved in productiveness. In Picon's winze, the 50 fm. level driving west has been advanced 3 varas 0 ft. 6 in. in very disturbed ground; in the east, 2 varas 2 ft. 9 in. have been driven, for the best part in productive ground; the east end is improving daily. The engine-shaft has been sunk 2 varas 1 ft. 4 in., or, say, 12 varas 0 ft. 1 in. under the 60. In No. 2 shaft we are driving the 60 fm. level ends, east and west of shaft, in the present month, the lode in both ends being productive. In September little or nothing was done except commencing a level west of shaft, owing to the difficulty of getting men to take the bargain. No. 1 shaft has been sunk 5 varas, or to a total depth of 15 varas 0 ft. 9 in. under the 50; the favourable change caused by the coming in of the north lode in the shaft productive, as mentioned in my last report, is very satisfactory; the said lode, from 2 to 3 feet wide, has proved productive throughout, and has been a great help to the speed obtained in sinking. The stopes offer nothing particular to remark. Our produce for September amounts to 114 tons. My estimate in cost of bargains in leading workings and stopes, and the produce attainable therefrom, for the month of October, is as follows:—Cost, 57,900 reals; produce, 115 tons. Number of men, 149—or, say, 58 men in shafts and winzes, to sink 74 varas; 49 in levels and cross-cuts to drive 102 varas, and 42 men in stopes to spend 305 varas.

THE SLATE TRADE—ITS STATE AND PROSPECTS.—The highly satisfactory position of the SLATE TRADE—the demand being so much greater than the supply—renders all information respecting it of general interest. Some three years since a descriptive pamphlet was issued by Mr. T. C. Smith, of which two editions of 5000 each were speedily disposed of; this has now been re-printed, with much original matter from practical authorities in the several districts, and particulars of most of the quarries at work, explanatory of their state and prospects. The new work is published at 1*s.* each, and can be had at our office.

CLEVELAND IRON.—At the rolling mills everything seems to be going on satisfactorily, and in spite of the strong competition of the Belgians, who have undertaken contracts at exceedingly low figures, there are plenty of orders in hand at all the works, at good prices, to keep them in full operation for some time to come. Messrs. Fox, Head, and Co., of Middlesbrough, who are going to make plates, have got thirteen puddling furnaces in operation. Messrs. Hopkins and Co., of Middlesbrough, and the Darlington Iron Company keep adding to their total of puddling furnaces almost every week. Messrs. Pease, Hutchinson, and Ledward's operations have been stopped entirely for a few days during this week by an accident. They are now, however, again nearly at full work. Messrs. C. Ianson and Co. have made a commencement with their intended rolling-mills on the north side of the Stockton and Darlington Railway, about 300 yards from their present works. It is also rumoured that there is some intention of establishing ironworks adjoining the railway, a few hundred yards north of the land selected by Messrs. Ianson and Co. With regard to labour, the report from Middlesbrough is that skilled and unskilled hands are plentiful, attributable almost entirely to the unsettled state of things in Staffordshire.—*Darlington and Stockton Times.*

RAILWAY ROLLING STOCK COMPANY.—Mr. H. Ward has been chosen to fill the vacancy in the direction caused by the death of Mr. Phillip Williams.

# Mining Correspondence.

## BRITISH MINES.

BAGTOR.—W. Hosking, Oct. 27: We are laying open profitably productive ground on Prosper lode by extending the 16 fm. level west of Prosper shaft, in which extension during the past fortnight the lode has improved. In the stope also in the back of this level, spoken of in my last report as having been newly set, the lode has improved in value, and is yielding good work. Quickbeam lode, in bottom of Quickbeam engine-shaft, is 3½ feet wide, and continues to be interspersed throughout with tin, though not of a sufficient quantity to value; the nature of the lode and strata, however, shows that nothing but depth is lacking for richer produce.

BEDFORD CONSOLS.—John Mitchell, Oct. 27: In the middle adit level east we are still pushing on the cross-cut north and south towards the new north and south lodes as fast as possible, and the ground continues much the same as last reported on.

BEDFORD UNITED.—J. Phillips, Oct. 26: The two stopes in the back of the 130 fm. level west yield 3½ tons each of ore per fathom. There are three stopes in the back of the 115 fm. level west, yielding as follows:—No. 1, 4 tons, improved; No. 2, 3½ tons; and No. 3, 2½ tons of ore per fathom. In the back of this level east, the stope is worth 2½ tons of ore per fathom. The lode in the 103 fm. level west continues to produce 2 tons of ore per fathom. The stopes in this level (two in number) yield 3 and 2½ tons of ore per fathom. In the back of the 90 fm. level west there is one stope, yielding 2 tons of ore per fathom. The ground in the cross-cuts in the 80 and 70 fm. levels is favourable for progress. In the 58 fm. level east the lode is without any change to notice. The stope in the backs of the 58, 47, and 35 fm. levels are worth on an average 2 tons of ore per fathom. The engine-shaft, on the north lode, is being sunk by the side of the lode. In the 62 fm. level east the lode has not been taken down since last reported.

BEDOL-AUR.—Oct. 26: The branch which I mentioned in my note of Friday is not the Bcili Gwyn vein, but a cross branch with good lead in it. The ground in the end of the 70 has quite changed its character, being split up in several small branches, but is not easier for working; it is now presenting a fine appearance. The vein itself is 9 in. wide, and will produce full 12 cwts. per fm., but the vein has been returning very irregular lately. We expect from the altered state of the ground to be within a few feet of the Beili Gwyn vein. Stoping the bottom of the 70, on the branches, is easy ground for working, but not rich at present, worth about 6 cwts. of lead per fm.; should this fail, I think we could stope away the back of the level north-east with profit, there being a good branch for about 16 yards, and still lasting. In the present end everything is looking very promising. The cabin will be finished about the middle of next week.

BOSCAWEN.—J. Edwards, R. Giles, Oct. 22: No change to notice in the 80, west of Hunter's shaft. The lode in the 70, west of said shaft, is unproductive. Nothing new in the 70 east, on south lode. The lode in the sump-winze sinking below the 70, west of Hunter's shaft, is worth 20*l.* per fathom for copper ore. The lode in No. 1 winze, sinking below this level, is 15 inches wide, producing good stones of copper ore. The stope in back of this level is worth 20*l.* per fathom. The lode in the 40, west of Hunter's shaft, is 1 ft. wide, producing good stones of copper ore. No lode yet intersected in the 80 cross-cut, south of Hunter's shaft. The lode in the 14, driving east of Kitelee's shaft, is 18 inches wide, producing stamping work for tin. We have intersected the elvan-course at the new shaft. There is no change to notice in the deep adit, driving east from Hallenbeagle.

BOTELET.—J. Trevellion, Oct. 25: At the 26 south the lode is 4 feet wide, consisting of flookan, prian, and good stones of lead; at the same level north the lode is 3 feet wide, and has a very kindly appearance, worth 4 cwts. of lead per fathom. I expect an improvement in this end shortly, as we shall soon get under the shoot of ore passed through at the level above; present price for driving 30*s.* per fathom. At the 16 the south the lode is 2 feet wide, composed of capel, with good spots of lead; the same level north is temporarily suspended, and the men engaged elsewhere; the stope in back of this level still continues to yield 6 cwts. of lead per fathom. Since we holed the rise to the adit the mine has been well ventilated. I hope to sell 10 tons of ore previous to the meeting, to be held in about a fortnight.

BOTTLE HILL.—J. Eddy, Oct. 25: Since Friday last we have had a full supply of water for stamping and drawing; since then I have had the stamps working on the stuff coming from the stopes east and west of new shaft. The lode in this part of the mine being very rank of mundic, I felt anxious to stamp, calcine, and dress up a small parcel of this stuff to test its quality: I am happy to say it has turned out better than I expected. I have a good opinion of the lode in this part of the mine, and I have no doubt it will turn well. I have sent samples of our parcels of tin to the different smelters. Offers will be received by Mr. Croker on Thursday next, quantity 3½ tons.

BRYNTAIL.—J. Roach, Oct. 25: In the 30, driving east, we are carrying a portion of the south part of the lode; latterly we have been blasting down some of it about 18 in. in width; this contains stones and a slight mixture of ore throughout, and to-day we blasted a hole further north, which also produced strong spots of lead; judging from appearances, one wobid say it cannot fail to improve; the accompanying stratum is congeuial to lead. The 30 west contains occasional spots of ore, and will soon be under the first ore ground seen in the 20, and that which Capt. Williams reported on when he was here, when I expect great improvement. In the 20 east we have driven 15 ft. south on the lode—latterly the ground has altered, and stones and small branches of ore have been found, but nothing of importance yet. In a day or two we shall be driving east, on the south part of the lode, when I hope to meet with similar bunches of ore as found in the deep adit and underneath. In the 20 west, on the north part of the lode, we are sinking; here we get solid stones and a mixture of ore, and I look forward to much better results when the 30 shall be driven underneath—inasmuch as the 20 shows great improvement when compared with the level above, where we had no ore. I am working the mine as skilfully as I can, and I think it is impossible to adopt any better course than that which we are now pursuing.

BULLER AND BASSET.—J. Rule, Oct. 26: The 80 fm. level west, on south lode, is still producing rich stones of yellow copper ore, with no appearance of the south wall as yet. Fine stones of ore are occasionally found as far south as we have seen. The 80 cross-cut is progressing favourably. At present we are not driving in the 60 fm. level, on engine lode, the air being so confined. A new shaft is much wanted over this end; if we had that we think we should be enabled to carry on profitable workings.

CAMBRIAN.—T. Martin, Wm. H. Pascoe, Oct. 25: The operations in the different bargains have been carried on with spirit, and a satisfactory amount of work has been done. In the No. 2 adit, east end, the lode has widened to fully 4 feet, composed of dark quartz, mundic, copper, and some spots of lead, gradually bettering in quality, now producing enticing samples of gold; this improvement which is now taking place in the lode in this end, going on towards the centre of the hill, and under the B and C shafts, is of a most satisfactory feature.—No. 2 A Shaft: Here the lode continues large and mineralised as before, producing occasionally gold in the samples.—No. 2 B: The south part that split from the main lode is large, always producing gold from the batea. Should the southern part alter its underlie, and unite again, as we think it will ere long, we may expect an improvement in the lode that will in all probability continue down. At the new diagonal shaft, east of No. 2 B, we have sunk 2 fathoms; the lode is large, and precisely of the same character as in No. 2 B, always showing gold in the batea. In the cross-cut south, at No. 6, there is nothing new to report.—Wellington: In the end driving east the lode continues without alteration. The men working on the outcrop are still sinking on the same lode as when we wrote last; it continues to look promising, but the trace of gold is not much improved.—North Vigra: At this place there is nothing new of importance.

— T. Martin, W. H. Pascoe, Oct. 26: A sample washed this moment from the No. 2 east end looks quite as well as any hitherto tried. On the whole, we are glad to inform you that the No. 2 lode appears to us to be very encouraging.

CAPE CORNWALL.—R. P. Goldsworthy, Oct. 26: We have cleared the sollar within 6 ft. of the back of the level; our men have experienced great difficulty in clearing it, they have been obliged to cleave large rocks, which where thrown in from the surface; the more speedy way would have been to blast them, but we had recourse to cleaving, in order to prevent damage being done to the lift we hope to be able to drop below the level in a few days. No change to notice in the adit on Wheal Owl; the men who were engaged in sinking the shaft on Wheal Owl are assisting the pumpmen to clear the sollar referred to above.

CARADON CONSOLS.—W. Rich, Oct. 25: There has been nothing new discovered in the 80 fm. level cross-cut south during the past week; the ground seems to be getting easier for driving, and the end is being urged on as fast as possible. The south branch ground west is still in unsettled ground, but it carries good quality copper ore; we intend to open on this branch east of the cross-course as soon as the end going south is driven a little further. We hope to take down the engine lode in the winze sinking below the 80 the latter end of the week.

CARDIGAN CONSOLS.—J. Sanders, Oct. 26: The new pumping-wheel is completed, and was put to work this morning. During the erection of the new wheel a temporary line of rods was attached to the drawing-wheel, by which means the water was got out of Copper shaft. The driving of the 20 east was resumed last week, where the lode at present is yielding about ⅛ ton of copper ore per fm. In consequence of pumping with the drawing-wheel, we have not been able to draw the stuff, therefore it has been accumulating in the mine; but now the new wheel is working we shall begin to draw as formerly, and as soon as the stuff is cleared a cross-cut will be driven south in the 20, to prove the south part of the lode at that depth. The lode in the end driving east is 3 ft. wide, but poor at present. This part of the lode will form a junction with the south (or main) part of it in a few fathoms driving, where an improvement is most likely to be met with. The lode in the boundary adit is all the width of the level (6 ft.), and part of it is still standing by the side. The lode is unproductive at present.

CASTELL CARN DOCHAN (Gold).—J. Parry, Oct. 28: The lode in the stopes looks promising and favourable for visible gold, the north-east end being little narrower than usual. The Nos. 1 and 2 levels are without any important alteration since my last; the lode in the end of the latter shows occasionally specks of visible gold. The wheel-pit is being proceeded with as fast as possible. We are also busy cutting the foundation for the stamps and building. The produce of gold from Britten's machines for the week ending Oct. 25 was 2 ozs. 7 dwts. 17 grs., being the result of 20 cwts. of stuff, unpicked, as it was delivered from the stopes.

CEFN BRWYNO.—Oct. 25: The lode at the 92, east of Taylor's shaft, is 4 ft. wide, yielding 12 cwts. of lead ore per fathom; the same level, west of shaft, is in a lode 3 ft. wide, producing at present 1 ton of lead ore per fm. The lode at the 80, east of shaft, is 3 ft. wide, yielding a little ore, but not to value; lode still disordered by cross joints, &c.; the lode in the same level, west of shaft, is 4 ft. wide, producing 12 cwts. of ore per fathom. The lode at the 56, or deep adit level east, is 2 ft. wide, showing a little ore at times, and letting out a great deal of water; ground rather soft, and lode rather disordered at present. The winze below the 68 fm. level, 70 fathoms west of shaft, is suspended for the present, the water being so quick we could not sink it, but the 80 end will soon be forth under this ground, when the winze will be drained and communicated quickly, as it is now down 6 fms. below the level. The dressing, &c., with all other surface work, is going on regularly.

CEFN CILCEN.—C. Hester, Oct. 26: The lode in the 80, Susan's shaft, driving east, increases in width, being now 2 ft. 9 in. wide, from top to bottom composed of spar, clay, and shale, the spar and clay coming in on the hanging side, with occasional deposits of blende. The office shaft is cleared of the old workings, from which the old people took large quantities of lead ore; the end is hard, a cross joint cutting off the lode. A few yards driving will put us on to the ore again, it being only a bar, which is often met with in this sett. It being the end of the old men's take, they did not attempt to cut through it. The lodes make to surface, and run in beds. The beds are dipping to the east, and as we are driving in that direction we must meet the beds as they come down.

CLOWANCE WOOD.—E. Chegwin, Oct. 26: In the engine-shaft, sinking below the adit, the ground is favourable, and the sumpmen making great progress in sinking. The engine is working well, and the water little.

CONNORREE.—Capt. Bishop, Oct. 22: The deep adit still presents favourable indications for a greater yield of sulphur ore as the end advances to the junction of the trap rock formation. In the 74, east of engine-shaft, the yield of sulphur is much the same as last week, and our prospects good for a greater yield of ore. The 54, west of engine-shaft, is much the same as last week, and yielding good-class copper ore. In the 45, west of engine-shaft, the copper part of the lode is wider, consequently the yield of ore is greater; the sulphur part is of the same class and yield as for some weeks past. In the 18 fm. level ends, east and west of Field's shaft, the component parts of the lode are the same as last week. In the 10, east of Kempson's shaft, the yield of copper ore is increasing here, and I am inclined to think this is the old Connorree copper lode in this new or untried part of the property. In the 10 cross-cut, south of Tracey's shaft, the rock is of the same character as last week. In the stopes on the great copper and other lodes the yield and quality of ore is much the same as last week.

CRENVER AND WHEAL ABRAHAM UNITED.—J. Vivian, Oct. 27: At Vivian's shaft, in Oatfield, the 90-inch cylinder engine is nearly all in the house, and balance-bob put in position ready to connect. The house for No. 1 30-inch winding-engine and capstan will be finished this day. The boiler builders make rapid progress. The new machinery in the engineer's shop answers admirably, having this week turned off a cast-iron girder in our large lathe for the 90-inch engine of 4 tons weight; the same engine drives the fan-blasts and steam-hammer in smith's shop, and two large saw-mills in the carpenter's shop; these are constantly at work. At Wheal Abraham, or middle sump, the 80-inch steam-engine is nearly all in the house in position, the balance-bob here is complete, and the house for No. 2 30-inch winding-engine and capstan will be up by the end of this week, and the house for the third winding-engine and capstan is up. Our operations, on the whole, progress satisfactorily.

CUDDRA.—F. Puckey, E. Danstan, Oct. 27: The lode in the 105 fm. level, west of Walker's shaft, is still looking very well, and at the present time is full 8 ft. wide, worth 30*l.* per fm. In the same level, east of the cross-cut, the lode is 4 ft. wide, and worth 12*l.* per fm. The lode in the stopes in the back of this level is 9 ft. wide, worth 15*l.* per fm. In the 90 west the lode is 2 ft. wide, producing good saving work for tin. In cutting out the lode behind the 75 end, west of the shaft, the lode is 6 ft. wide, composed of quartz, peach, and iron, and producing saving work for the stamps, worth 8*l.* per fm. The lode in the stopes in the back of the 75 and 60 fm. levels are of the same value as in our last week's report.

CWMBRANE.—J. Kemp, Oct. 26: The 50, south of shaft, is poor at present; this level has produced lead more or less for 12 fathoms, which shows that the branch has lengthened full 7 fms. in 10 fms. sinking. The shaftmen are cutting plat ore for sinking, and will, I hope, be ready for sinking by the end of this week. The stope in back of the 50, south of shaft, is producing 12 cwts. per fathom. I hope to have a good stope here. The western shaft will be completed in about nine days. The stope in back of the 10 is worth 5 cwts. per fm. The stope in bottom of the adit, north of shaft, is worth 12 cwts. per fathom; this is on the Red lode, and looks very promising indeed. We are very busy with the sampling.

CWMBYR.—E. Ridge, Oct. 22: The 30 has much improved, the lode being from 5 to 6 ft. wide, composed of spar, blende, and lead, saving dressing of the latter. A large stream of water is cut which will drain the 20, and we shall now sink a winze to the 30. The drawing machine will be placed to the turbine next week. The 20, driving west, is 2 ft. wide, composed of hard clay-slate and spar. No. 1 stope is yielding 12 cwts. of lead per fathom. The 30 west is improving. The 30 east is 3 ft. wide, composed of slate, spar, and a strong mixture of blende. We hope to have 20 tons of lead ready by the end of this month.

CWM ERFIN.—Oct. 25: The lode in the rise in the back of the 20 is 3 feet wide—unproductive. Three stopes in the back of this level will yield on an average 15 cwts. of lead ore per fathom. The lode in the 10, east of boundary, is 2 feet wide, worth about 1 ton of lead ore per fathom. The stopes in the back of this level will yield 1 ton of lead ore per fathom. The lode in the rise in back of the 10 is 4 feet wide, and worth 1¼ ton of lead ore per fathom. The lode in the stopes over the 10 fm. level, 20 fathoms east of boundary, is worth ¾ to 1 ton of ore per fathom; we expect this stope to still further improve. The lode in the winze sinking below the deep adit level is 3 ft. wide, and worth 1¼ ton of lead ore per fathom. The lode in the three stopes in the back of the adit level will yield on an average 17 cwts. of lead ore per fathom. The lode in the 10, west of the engine-shaft, is 2 feet wide, with spots of lead ore. The lode in the shallow adit level, east of the cross-cut, is 4 feet wide, and worth 2 tons of lead ore per fathom. We sampled this day 62 tons of lead ore.

DALE.—R. Niness, Oct. 27: The Pipe vein in the bottom workings is yielding very well. The stopes in the back are the same as when I last wrote, also the tributers' pitch.

EAST ABRAHAM.—H. James: The ladders are so far completed as to enable us to get down to the adit level, and I am glad to inform you that the level is sufficiently clear that we can walk from the footway to the whim-shaft. At the bottom of the whim-shaft there is a pile of stuff, which must be cleared before we can get on any further in that direction. There is also a pile of stuff in the mouth of the cross-cut, which must be cleared before we can get into to see the south lode. We brought the whim on the mine on Saturday last, and shall erect it as soon as possible, in order to get the piles of stuff out of our way to commence opening on the lodes. I cannot state the exact time this work may take, but hope to be able to do so on Saturday.

EAST BOTTLE HILL.—Jos. Eddy, Oct. 27: We are now down from 8 to 9 fathoms with our air-shaft, and we consider we have about 5 fms. further to sink to communicate with our adit level. The ground in the adit level is favourable for driving, and we have made good progress during the last month. I hope to cut the lode by the time named.

EAST CAMBRIAN.—C. R. Dixon, Oct. 22: The stopes in Joe's level are looking remarkably well, yielding both lead and blende of fine quality. The cross-cut in the same level is also looking well, and producing beautiful stones of ore, specimens of which I will bring with me on Tuesday. The large wheel works well, and I hope to have the stamps in their place by the end of the present month. The pumps so long delayed are, I am informed by my letter of advice, at Portmadoc, and will be sent on immediately.

EAST CARADON.—J. Seccombe, Oct. 26: Caunter Lode: The 60 east is poor; the 70 east is worth 7*l.* per fm.; the 80 east, saving work; the 80 west, saving work.—New Lode: The 60 east is worth 6*l.* per fm.; the 60 west is worth 7*l.* per fm.; the 80 east is worth 15*l.* per fm.; the 80 west is worth 5*l.* per fm.—South Lode: The 60 east is worth 6*l.* per fathom.

EAST CARN BREA.—Thos. Glanville, J. Scholar, Oct. 26: No. 3 Lode: In the 60, west of the cross-course, the lode is yielding 3 tons of copper ore per fm. In the winze sinking below the 60 the lode is yielding 4 tons of ore per fm.—New Lode: In the 50 west the lode is yielding 1 ton of ore per fm. In the 30 east the lode is yielding 2 tons of ore per fathom. In the 26 west the lode is yielding 1 ton of ore per fm.—No. 4 Lode: In the 50 west the lode is yielding 3 tons of ore per fathom. We have sampled to-day 321 tons of copper ore.

EAST GREAT WORK.—J. Lean, Oct. 26: The engine-shaft is sunk about 5 feet below the 10 fm. level, ground favourable for sinking. No change worth noticing in any other part of the mine.

EAST GUNNIS LAKE AND SOUTH BEDFORD.—J. Phillips, Oct. 27: In the 36 we are driving by the side of the lode, and hope to take it down in the course of next week. The water is flowing strongly from the end, and we expect to find the lode improved. In Gard's engine-shaft the men are making good progress. The tribute pitches are looking much the same as last reported. The lode in the deep adit end is 7 ft. wide; the leading part is 3 ft. wide, composed of friable fluor-spar and rich coated ore, good saving work, and the remaining 4 ft. is impregnated throughout with ore; we may fairly expect a considerable improvement here shortly.

EAST JANE.—T. Hodge, Oct. 27: In the 26, south end, we have met with a small crossing, which has disordered the western part of the lode. We shall now turn our end a little more east towards the eastern part of the lode; the horse between the two is about 6 feet wide; the eastern part last seen, 4 fathoms behind the end, is 2 feet wide, yielding dressing work. The stope in back of the 14 north will yield 4 cwts. of lead per fm. Nothing else new in the underground department. The engineers are getting on pretty well with the erection of the engine; if wanted, it might be set to work in three or four days; we have only three men now employed about the engine. The pitwork has not yet come to hand, but hope to get it now in a day or two, when no time will be lost; everything shall be pushed on as fast as possible, in order to set the engine to work in the quickest possible time; but for the delay in the pitwork, the engine would be set to work for good the latter part of next week. The late bad weather has retarded our progress at surface. The masons have nearly completed the balance-bob stand, &c.

EAST PROVIDENCE.—T. Uren, W. White, Oct. 27: We are making fair progress with the sinking of Wilson's shaft below the 60; it is down 7 fms. below the level, and will be communicated with the 70 in about three weeks. The 60, east of junction, on Bamfield's lode, is producing stones of tin. The winze sinking below the 60, on Bamfield's lode, is worth 20*l.* per fm. No. 1 stope, in back of the 60 east, is worth 15*l.* per fathom; No. 2, in back of the same level, is worth 12*l.* per fm.

EAST ROSEWARNE.—J. James, Oct. 27: The ground is hard at Hallett's shaft, with more spar than usual. In the 75 east we have a good branch of ore, 6 in. wide, opening ground that will work on tribute. In the 75 west the lode is 15 inches wide, of a most promising character, but a little declined in value, worth at present 8*l.* per fathom. At King's shaft, sinking below the 65, the lode is 14 inches wide, worth 20*l.* per fathom. In the 65, west of King's shaft, the lode is about 18 inches wide, with more mundic than usual, consequently not quite so valuable for copper ore; it is a fine looking lode, and I have no doubt it will soon improve, worth at present 12*l.* per fm. Our stopes throughout the mine are much as last reported. We sampled on Tuesday last (computed) 163 tons of good quality ore.

EAST TRESKERBY.—J. Nancarrow, Oct. 24: There has been no lode broken in the winze below the adit since last week. The 12 east is rather poor. The stope in the back is worth from 4*l.* to 5*l.* per fm. The stope in back of the 12 west is worth 4*l.* per fathom. There is no alteration in the rise above the 30, nor in the 30 north.

EAST WHEAL FLORENCE.—J. Goldsworthy, Oct. 24: The sinking of Verran's engine-shaft is progressing satisfactorily; the lode is from 4½ to 5 feet wide, composed of capel, quartz, prian, mundic, and spotted with yellow copper ore; a very promising lode at the present depth. In the adit end east, on Knowling's lode, a large cross-course has been intersected, proving to be of great width, full 18 feet wide, composed of quartz, prian, flookan, lend, and copper ore; one of the finest cross-courses I ever saw in Cornwall or Devon. The lode to the east of the cross-course appears to be hove a little to the south, in a few days the size and character of which will be proved; there is every reason to expect large deposits of copper ore in connection with this cross-course. A sink has been put down in the bottom of the adit on Knowling's lode, to the west of the middle cross-course, where the lode is producing rich stones of yellow copper ore; in depth there is not a doubt but that large deposits of rich copper ore will be found. The building of the engine-house will soon be completed; the walls of the carpenter's shop are up, and the roof, &c., will be completed in the course of a few days. The surface work, on the whole, is progressing in a most satisfactory manner.

EAST WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Oct. 26: We have no done anything to the lode in the engine-shaft this week, the men being engaged taking out ground for the cistern. The lode in the 75, east of shaft, is 18 in. wide, of quartz, &c., with stones of ore, looking more kindly. The lode in the 75 west will average 2½ feet wide, of quartz, which is thickly impregnated with strong yellow, black, and grey ore, and mundic; the end is letting out water, and is improving every foot we drive, if the water would allow us to make the most of the ore; it is now worth more than 1 ton to the fathom, therefore we have every confidence that it is bordering on a bunch of ore; there is a vast change in the appearance of the lode here and in the level above, immediately over this place. The lode in the 65 west is 15 in. wide, and worth for ore and tin 8*l.* per fm. The eastern stope is worth 3 to 4 tons, and the western one is worth 6 tons to the fathom. The lode in the 55 west is 2 ft. wide, and worth 10*l.* to 12*l.* per fm. The rise above the 55 is worth 30*l.* per fm. We may again say that we have a very high opinion of the lode in the 75.

EAST WHEAL LOVELL.—J. Burgan, Oct. 27: South Lode: Sinking below the 28 fm. level the lode is 4 feet wide, which fully maintains its character. The tinstuff from this lode has not been drawn to surface this week, consequently I have not assayed it.—North Lode: The new shaft is now completed within 6 fms. to the bottom of the mine; also the skip-roads and drawing machinery are ready to the same level. The remaining 6 fms. of the new shaft will be completed rapidly, as it is now falling in with the lower parts of the former rich shaft. The shaft at the top of the field, or Turnpike shaft in future, has great chances of success, as the lode has been driven upon since my last report, and found productive of good quality tin. We are making arrangements for laying down flat-rods, bobs, &c., to explore it forthwith.

EAST WHEAL LOVELL—(*Special Report*).—Thomas Hodge, Oct. 26: At your request, I have inspected East Wheal Lovell, and the following is my report thereon:—North Lode: Burgan's shaft is as deep as the 26; no level has yet been driven east from this shaft, but the end of the shaft from the 17 to the 26 is showing good tin ground; and the fact of seeing that the old men have worked extensively above the 17 leads me to believe that there is a good piece of tin ground standing in that direction. This ground will become available as soon as the pitwork is fixed in the new engine-shaft. About 7 fms. west of Burgan's is the diagonal shaft, sunk 14 fms. below the 26, for a 40 fathom level. The lode, for the whole sink (14 fathoms) has been highly productive for tin, varying in value from 90*l.* to 120*l.* per fm. I could not examine the bottom of the shaft, but the agents state that the lode in the bottom now is as good as at any former period. The ends of the shaft are equally good. In the 20 fathom level end west the lode is 15 inches wide, producing some nice stones of tin, and letting out water freely, which I consider a favourable indication. All the tin ground is worked away in the back

of this level. The new engine-shaft is cut down 29 fms. below surface, and I think it will take from two to three months more before you will be in a position to do much towards opening out levels in the 40. When this shaft is completed you will be in a position to make large and profitable returns of tin.—South Lode: About 7 fms. west of the engine-shaft a winze has been sunk 9 fms. below the 20, in a splendid lode of tin, varying in value from 70l. to 90l. per fm., the ends of the winze standing good. The lode in the present bottom is not looking quite as well, probably worth, for the length carried (9 feet), from 40l. to 50l. per fm. In order to render this ground available for stoping, this winze will be communicated to the 40 by means of a cross-cut from the new engine-shaft.—New Lode: A shaft has been sunk below surface 8 fms.; a little water being in prevented me from seeing the bottom. About 19 feet from the bottom the lode is about 20 in. wide, producing some nice stones of tin. This lode will, doubtless, when opened at deeper levels prove profitable for tin. Taking the mine throughout, I consider the indications of permanency of productiveness are greater now than at any former period.

EAST WHEAL RUSSELL.—John Goldsworthy, Oct. 26: There is no change in the character of the ground at Homersham's shaft, or in the 130 fm. level cross-cut driving north, or in any other point since reported upon last week.

EAST WHEAL VOR.—J. Pollard, Oct. 26: The following is our setting report of Saturday:—On the old Wheal Vor main lode, during the past month, the engine-shaft has been sunk 1 fm. 4 feet, and is now let to eight men, for one month, at 8l. per fm.; the lode is 2½ feet wide, and more defined. The 70 to drive west, by two men, for one month, at 7l. per fathom; the lode is 3 feet wide, yielding a little tin. The 60 to drive west, by two men, at 7l. per fm.; the lode is 2 ft. wide, producing occasional stones of tin. The cross-cut to drive north from the 60 fm. level plat, by six men, for one month, or cut the lode, at 9l. per fm. The bottom of the 50 west is set at a tribute of 10s. in 1l., to four men. The sinking of the winze in the 50 east we have again resumed; now set to four men, at 9l. per fm.—Smith's Lode: The 30 to drive west, by two men, at 5l. per fm. We have four men timbering and securing Vivian's shaft.

FRANK MILLS.—J. P. Nicholls, J. Cornish, Oct. 26: The ground in the engine-shaft, sinking below the 115, continues to present the most favourable indications, and good progress is still being made. There is no change in the winze sinking in the 84 north since our last report. The same remark will apply to the rise in the back of the 100 north, coming up against it. The lode in the northernmost, or wide stope, in the back of the 60, has rather improved since our last report, 7 fathoms of the south end of which will now yield 2 tons per fathom. The lode in the stope adjoining to the south is still 18 feet wide, and yielding 3 tons of lead ore per fathom for the width. The remaining tutwork operation present no other feature worthy of remark. The tribute department is yielding about the usual quantity of ore. We sampled on Monday last 220 tons of lead ore, which will bring up our raisings for the past quarter to 310 tons.

GLASGOW CARADON.—W. Taylor, Oct. 25: In the 65 cross-cut south we are very near the caunter lode, water coming very strong from it, and a very favourable channel of ground; but the progress is rather slow, owing to being wet and troublesome for driving. I have great hope of cutting a good lode here, as there is a very good lode gone down in the bottom of the 52. We have commenced driving west on a lode intersected in the 65 cross-cut, which we shall call Mr. Clive's lode, worth 5l. per fm. good quality of ore in easy ground, and likely to improve as opened away from the influence of the cross-course. The lode in the 52 west is disordered for the time, producing stones of ore. No change to notice in the stopes since my last report.

GOLCH HILL.—Oct. 26: The lode in back of the 60 has improved, but the ground is still hard, worth about 15 cwts. of lead ore per fm. No. 2 stope is without alteration, as is also the end driving from sump, although a few spots of lead are seen occasionally.

GREAT BRIGAN.—J. Tredinnick, Oct. 26: In the end, driving east of Highburrow shaft at the 57, on the south, the lode looks kindly, and produces a little ore. The lode in the end, driving east of cross-cut at the 33, has improved during the past week, and now worth 5l. per fathom for copper ore. We have a good improvement in the winze sinking below the 33, east of Highburrow shaft; when we commenced to sink the lode was small and not to value; it has been taken down this week, and is 2 feet wide in the bottom of the winze, worth for copper ore 10l. per fathom, and looks very promising. No change in the north cross-cut, east of Ennor's shaft, at the 20. No lode has been taken down in the winze sinking below the 20, on the south. In the deep adit level, driving east of cross-cut, on Saturday lode, we are driving by the side of it, and have not taken it down for the past week; the ground is moderate for sinking the new shaft below the deep adit level, also for driving west of the same. All other work is progressing very satisfactorily.

GREAT CARADON.—F. C. Harper, Oct. 22: We are pushing on the driving of both the cross-cuts in the 60 fathom level as fast as we can; in the north one the ground is rather harder than it was when I last wrote to you, and more troublesome, in consequence of some branches crossing the end; the lode is composed of quartz, mundic, prian, &c., and letting down more water. In the south cross-cut I have no change to notice. We have passed through a large branch in the end, carrying spots of lead. The engine is in good working order.

GREAT EAST LOVELL.—J. Burgan, Oct. 27: The heavy rains and rough weather since my last report have much retarded the surface operations at this mine; notwithstanding, much work has been done; most of the engine will be delivered in the next few days, and the weather is again fine.

GREAT LAXEY.—John Kitto, Oct. 25: In the south part of the mine the prospects during the month have somewhat improved. The lead and jack stopes in the roof and sole of the 60 fm. level are still holding good, and are worth from 80l. to 100l. per fm. The 90 end is looking better for copper than it has at any former period, now worth 3 tons to the fathom, and likely further to improve. The copper sdopes below the 110 and 120 are just as they have been for some time past. The most important and encouraging feature in this end of the mine is now developing itself in the 155 and 165 fm. levels; the lode in these levels is much larger and richer for copper than it has been in the same run of ground in any of the levels above, and the former, or 155, is much better for lead also. In this end at the present moment the lode is full 6 ft. wide, and worth for lead and copper at least 100l. per fathom. The 165 is not sufficiently advanced as to be into the same run of ground as the last-named level, but will be in the course of another month's driving, when I have no doubt the result will be equally satisfactory; the lode in this end at present is large, and rich in copper, but so far is poor for lead. The 190 end is now advanced to within about 15 fathoms of the copper ground, but is still unproductive. In the north part of the mine very little change has taken place in any of the ends since last report. The 200 and 210, driving north from the Welsh shaft, are each yielding a little lead and jack, but are not rich. The 180 and 190 fm. levels ends are worth from 60l. to 70l. per fathom; the lode in each end is large, and of a very promising character. The stopes in the roof of the 165 are worth 180l. per fathom, and the sump sinking below the 155, immediately over, and now down 4 fathoms, is worth 200l. per fathom. This is a most encouraging feature, as it shows more plainly the immense quantity of rich lead ground standing whole above the roof of the 165 fm. level. In the 145 the lode is 5 feet wide, and worth 60l. per fathom. The 130 (the lode now getting fairly clear of the slide), is 2 feet wide, and worth about 20l. per fathom; there is no doubt as this end advances it will prove equally as productive as the levels below. The lode in the 110 north end, although not so rich as it was a month since, is still yielding nice lead, and has every appearance of soon resuming its former productiveness. The rise and stope in the roof never looked better, and are still worth about 200l. per fathom. At Dumbell's the sump sinking below the 70 is worth 50l. per fathom. The 70 end, driving north from the sump, is worth 60l. per fathom; and the end driving south in the same level about 20l. per fathom. Agneish's shaft is now down about 14 fathoms below the adit, and progressing satisfactorily. The trials in the New Snaefel and Glenroy Mines are being vigorously prosecuted, but up to the present no change of importance has occurred. The putting up of Agneash's wheel is being pushed on with all possible speed. The machinery through the mine is in good working order, and the general prospects of the mine below ground is, I consider, everything that can be desired.

GREAT NORTH DOWNS.—J. Wm. Crase, M. Jenkin, Oct. 26: At the 67, driving east of Vivian's engine-shaft, we have cut through the cross-course; the lode to the east of the same is large and kindly in appearance, being composed principally of quartz, and producing good stones of copper ore. There is no other change in any of our tutwork operations in the western part of the mine since our last week's advice. At Steggan's shaft we have put bed-plank down to the 70, and made the same complete for drawing from said level. The lode in the 70, driving east of the latter shaft, is worth 9l. per fathom; the lode in the same level, driving west of this shaft, is looking very promising, worth 14l. per fathom. The lode in the 75, driving west of King's shaft, has further improved, being at present worth 10l. per fathom. No other alteration has taken place during the past week.

GREAT RETALLACK.—W. H. Reynolds, Oct. 25: We have driven about 2 or 3 fms in the adit level east beyond the lode last reported, and the ground continues favourable. The adit at this point is about 17 fms. deep.

GREAT SOUTH CHIVERTON.—John Nancarrow, J. George, Oct. 24: In the west end, driving south, the ground continues favourable for driving, but it is still disordered; the lode contains gossan, as usual, which is letting out water freely. In the west end we have met with patches of gossan in the killas, but they do not appear to be connected with any lode; the ground is moderate. The smiths' shop is covered, and the men are now getting into it to change.

GREAT SOUTH TOLGUS.—J. Daw, Oct. 26: In the 154, west of Lyle's shaft, the lode is 4 feet wide, worth 12l. per fm. for tin. In the 154, west of cross-cut, the lode is 1½ foot wide, producing 2 tons of copper ore per fm. In the 154, east of cross-cut, the lode is 2 feet wide, unproductive. In the 140, east of new shaft, the lode is 3 feet wide, producing some good stones of ore. In the 100, east of Noel's shaft, the lode is 1½ ft. wide, producing a little ore. The tin stopes are looking well. We shall sample to-morrow about 120 tons of tinstuff.

GREAT WHEAL BADDERN.—John Jenkin, Oct. 22: Hill Brothers Shaft: In the cross-cut driving north in the 75 the ground is a little easier, and very congenial for lead; the water is flowing very strong from the end, which indicates that we are no great distance from the elvan course. The tin stopes in the 25, east of Buckley's, are much the same as when last reported. We intend to sample a parcel of tin for our next sale, which will be about the end of this month. Our surface and dressing operations are being carried on with all speed.

GREAT WHEAL BUSY.—J. Edwards, J. Petherick, J. Tredinnick, C. Bawden, Oct. 22: There is nothing new in Harvey's engine-shaft. We have intersected the main part of the lode in the 140, east of Harvey's, and have cut into it 4 ft.; so far as we can see it is worth 30l. per fathom for tin, and a little copper ore. We have commenced another cross-cut south at this level, about 7 fathoms east of Harvey's, and no doubt we shall meet with the lode in driving about 2 fms. The lode in the 140, driving west of Offord's shaft, is 5 feet wide, worth full 50l. per fathom for tin and copper ore. The lode in this level, east of said shaft, is 5 feet wide, and worth 4l. per fathom. The lode in the winze sinking below the 30, east of Harvey's engine-shaft, is 5 feet wide, worth from 12l. to 15l. per fathom. We have resumed sinking No. 1 winze in bottom of the 130, east of Offord's shaft. The lode in the 130, driving east of said shaft, is 3 ft. wide, worth 15 per fathom. The lode in the 130, driving west of Fielding's shaft, is 2 ft. wide, producing a little tin, but not to value. There is nothing new in Mathews's shaft, or in the 110 and 100, east of ditto. The lode in the 90 east is worth 12l. per fm. We have commenced sinking a winze behind this end on tribute, at 3s. 6d. in 1l. The lode in the 80, east of Mathews's shaft, is large but unproductive. The lode in the 70 end and stope is worth respectively 10l. and 12l. per fathom for tin and copper ore. We are progressing satisfactorily with the sinking of Walker's shaft below the 36, also with the driving of the cross-cut south towards Wheal Vor lode.

GREAT WHEAL FORTUNE.—J. Vivian, N. T. Miners, T. George, Oct. 26: Carnmeal engine-shaft is sunk 4½ fms. below the 114; the lode in bottom of the shaft is 4 ft. wide—stamping work. No lode has been taken down in the 114, driving east, since last reported upon. The lode in the 102, driving east, is 4 ft. wide—stamping work. The lode in the 102, driving west of Hoskins's flat-rod shaft, is 5 ft. wide, and unproductive. The lode in the 68, driving east, is 3 ft. wide, producing a little tin. Hicks's skip-shaft is sunk 10½ fms. below the 20; the lode in the bottom of the shaft is 4 ft. wide—a very kindly, fine looking lode. The lode in the 20, driving west, is at present small.—Old Mine: We are making good progress in sinking Harvey's engine-shaft below the 95 fm. level. The cross-cut in the 95 is driven north 75 fms., by six men, at 13l. per fathom. —Blue Barrow Lode: The lode in the 95, driving east of cross-cut, is worth 7l. per fm. The rise in back of this level is worth 12l. per fm. The lode in the 95, driving west, is worth 10l. per fm. The 60, east of Blue Burrow shaft, is producing stamping work. The stopes in back of this level are worth 7l. per fm. The 60, driving east of cross-cut, on the middle branch, is worth 5l. per fm. There is no change to notice in any other part of the mine.

GRYLLS WHEAL FLORENCE.—E. Rogers, Edmund Rogers, Oct. 25: In our underground department there is no alteration worthy of notice during the past week. At surface we are getting on as fast as possible with fixing flat-rods, &c., preparatory to working the engine, in order to resum eoperations below the deep adit; but the weather being so unfavourable during the past week, our progress has been slow.

GWYDYR PARK CONSOLS.—Wm. Smyth, Oct. 26: In Gwyn Lilifon deep adit the lode is still small, and the ground hard. We took down the lode in the Gwydyr stopes and middle level this week; in the middle level it is about 15 in. wide, composed of spar, blende, and lead ore, worth of the latter about 8 cwts. per fm. The stopes are just the same as last reported. The dressing is going on as usual.

HALLENBEAGLE.—J. Edwards, E. Richards, Oct. 22: The North lode, at Stone's shaft, sinking below the 40, is 15 in. wide, worth from 10l. to 12l. per fathom for copper ore. The lode in the eastern shaft, sinking below the 36, on north lode, is 14 in. wide, worth 8l. per fathom. The lode in Bawden's shaft, sinking below the 33, is 18 in. wide, producing stones of ore. The same remark applies to the winze in bottom of the level east of shaft. We are clearing up the sinks in bottom of the 43, west of Read's engine-shaft, and no doubt we shall find good tribute ground. We are still clearing up the south or footway shaft; our progress here has been slow, in consequence of bad ground, which requires a good deal of timber. The tribute pitches in bottom of the 40, west of Stone's shaft, are still improving. We are pushing on with the pitwork as fast as possible. All the surface operations are going on satisfactorily.

HARWOOD.—Jos. Race, Oct. 21: In cross-cutting north from the rise, at Scarhead, they have come to a flat of rider, proceeding from the vein, but have not yet cut into the bearing part of the vein. We have had a good improvement in the vein this week, the end of the drift going east being now worth 1 ton of lead ore per fathom. The stopes in the back of the drift are also worth 1 ton of ore per fathom, and looking well for further improvement. No alteration in Trough level. We weighed off 12 tons 18 cwts. of lead ore on the 18th inst., including the duty ore.

HAVAN.—G. Jones, Oct. 25: The men have not made much progress in the sinking of Carriston's shaft during these last few days, owing to the ground being much harder, and the vugh which let down the water having gone west of the shaft, and not letting down the water so freely as usual. I am in hopes it will again soon open, worth about 15 cwts. of lead ore per fm. The 10 east is worth about 15 cwts. of lead ore per fm. There are three stopes in the back of this level, which will produce at present 1½ ton per fm. The stope in the back of the 10 west will produce 1 ton of lead ore per fm. The lode in the deep adit still looks very promising.

HAWKMOOR.—J. Richards, Oct. 25: West Hawkmoor: We continue to drive the cross-cut north, on the western side of the cross-course; no lode yet met with. The lode east of the stopes, in the back of this level, is from 2 to 3 ft. wide, composed of capel, quartz, peach, and good work for tin ore.—Eastern Shaft: The lode in the stopes in the back of the 25 east is worth 2 tons of copper ore per fm.

LEAWOOD.—J. Nicholls, Oct. 21: Our engine is just put to work, and going on well.

MAUDLIN.—J. Tregay, Oct. 22: Old Mine: The lode in the 70 east end is still very large, and of the same character as when last repooted. In the 70 west we have not met with the north part of the lode yet. At Coombe's no lode cut yet.

MINERA UNION.—W. T. Harris, Oct. 27: Brabner's Shaft: The lode in the 80 yard level produces good stones of lead, and is of a very promising character. We have again commenced driving the level north upon the hanging side of the lode; the ground is improving in character, and yielding occasional stones of lead. The cross-cut from the top of the rise has reached the old workings, and is suspended. The pitch north of No. 1 winze is worth 1½ ton of lead per fathom. The pitches north and south of No. 2 winze have improved, now worth 15 cwts. lead per fathom. The level south from the winze, in the bottom of the 60 yard level, has very much improved, now producing rocks of lead of 3 cwts.—Williams's Shaft: There is no alteration in this portion of the mine since last report.

MOLLAND.—T. Bennetts, Oct. 26: The engine is working very well, and keeping the water out of the bottom level. We hope to have our parcel of ore dressed up by the end of this week or so, when we shall commence sending it to Barnstaple. Capt. Gifford was here last Monday, accompanied by Mr. Thomas Horswill, of Tavistock, and he seems to like the change and appearance of the mine at the bottom very much.

NEW EAST RUSSELL.—J. Gifford, Oct. 26: The new shaft is now 13½ fathoms; no water, and the ground favourable for sinking. We have a whim on the mine, and shall begin to erect it in the latter part of the week. The water in the adit level appears to be increasing, and I expect to commence driving the same in a few days. There are about 15 tons of copper ore at surface, worth (say) 60l.

NEW LAXEY.—J. Horsley, Oct. 25: The lode in the shaft has changed a little this last week, but it is not altogether so wide as it has been. The lode in the south end is about 2 feet wide, and 3 feet wide in the north end; the lode is still looking kindly, and worth 1½ ton of lead per fathom for the length of the shaft. The shaft is down below the 60 fm. level 7 fathoms. The lode in the 60 fm. level end continues the same, with a strong masterly appearance; the lode is about 4 feet wide, composed of kindly spar and quartz, and a little jack and lead mixed throughout the lode, worth about ¼ ton of lead per fathom. The end is driving from the shaft about 14 fathoms. The lead in the 60 fm. level backs is looking much the same.

NEW ROSEWARNE.—E. George, Wm. Mitchell, Oct. 26: Bickford's shaft is sunk 5½ fms. below the 74; the lode is 7 ft. wide, worth 15l. per fm. The 74 is driven west of Bickford's shaft 13 fms.; the lode in the end is 6 ft. wide, worth 25l. per fm. The stope in back of the 74 west is worth 35l. per fm. The lode in the 67, west of Bickford's shaft, is 4 ft. wide, producing a little tin, but not to value. We have commenced to sink a winze in the 67, west of Bickford's shaft; the lode is 2 ft. wide, worth 10l. per fathom. The stope in back of the 67 fathom level west is worth 10l. per fm. The lode in the 58 west is 3 ft. wide, producing stones of tin. Two stopes in back of the 58 are each worth 20l. per fm. The lode in the 46, west of Bickford's, is small and unproductive. The lode in the 34 is 3 ft wide, composed of spar, killas, and mundic.

NEW TRELEIGH.—S. Mitchell, Oct. 27: There is nothing of importance to report to-day. The men are now engaged in the following places taking down the lode:—The 90, west of Carr's engine-shaft; the 80 end in the rise above the 80, and also stripping down in the 60, west of cross-course; at each point the lode is orey. To-morrow is our tutwork setting, after which I will write full particulars of the lode and the result of the setting.

NEW WHEAL MARTHA.—G. Rickard, Oct. 27: During the past week we have cut into the horse of killas about 3 ft. in the 86, and find the water issuing very strong from the south part of the lode; we have every reason to anticipate from the character of the ground, and the high temperature of the water, meeting with a productive lode. There is no change worthy of remark in the 74 west since last report. The same remark will apply to the 64 west. The stopes in the bottom of the 52, east and west of No. 1 winze, are looking equally as well as stated in former reports, worth 50l. per fm. The lode in the 40 west is showing signs of improving as it approaches the cross-course, its component parts being of arsenical mundic, peach, and capel, with good stones of copper ore, worth of the latter 6l. per fm. The winze sinking below the 20, west from cross-course, is a splendid course of ore, worth full 45l. per fm. The lode in the 20, west of Thomas's shaft, is gradually improving as the end advances, and is worth at present full 15l. per fm. The stopes in the back of this level are not looking quite so well as last week, worth from 15l. to 20l. per fm. No change in the tribute departmant to notice.

NEW WHEAL ROSE.—J. Middleton, J. Hammil, jun., Oct. 27: The lode continues highly favourable, and without any alteration from what was reported last week.

NORTH BULLER.—R. Pryor, H. Harvey, Oct. 22: The lode in the 100, east of engine-shaft, is without change to notice since last report. The ground in the 100 cross-cut south is a little harder, being mixed with spar, and letting out a quantity of water, which induces us to think we are near the lode. The lode in the winze sinking below the 70 is 1 ft. wide, producing good stones of copper ore. The lode in the 80, on King's north lode, is 18 in. wide, intermixed with more mundic and copper ore than we have seen before, which we consider to be a good indication. Our engine and pitwork are in good condition, and working well.

NORTH CHIVERTON.—J. Hampton, Oct. 26: The air in the deep adit end east being foul we have commenced a rise to the level above, or 20 fms. below surface, wich is worth 2 tons of blende per fathom. We hope to communicate this rise next week, when free ventilation will do much for us at this part of the mine. The blende stopes present no material alteration in quality, and vary in value from 4l. to 10l. per fathom for the whole size of the lode. The winze sinking in the bottom of the 12, on Shepherd's lode, is worth 7l. per fm. for lead and blende, and there is a good lode standing in each end of the winze, which is down about 3 fms. below the level. The parcel of blende sold is taken to quay, but not yet shipped.

NORTH DEVON.—J. Blamey, Oct. 27: The more we see of the great caunter lode the more valuable it shows itself. In the winze below the 10 it is worth fully 10 tons, or 130l. per fm. In the rise above the same level, but further north, it is worth 12l. per fathom. In the adit level the lode has considerably improved, the rise being now worth 20l. per fm.; and the winze sinking below it is worth 24l. per fm. In the 20 cross-cut, driving to intersect the great caunter at that level, the end is letting out more water, and we shall no doubt cut the lode very soon. The cross-cut at the 30 still produces good stones of ore. We shall sample 50 tons of ore on Saturday.

NORTH GRAMBLER.—Wm. Pascoe, Oct. 21: We have taken out the engine from the old house and erected it in the new one; fixed all the pitwork in the new shaft; also put on the flat-rods from the new engine to the engine-shaft, and hope to put the engine to work to-morrow night. We have only been since Monday morning last doing the work referred to above, thus showing that the utmost dispatch has been made.

— Wm. Pascoe, Oct. 24: Our engine went to work in the new engine-house on Saturday night last. The engine, flat-rods, and pit are all in good condition, and working very satisfactorily.

NORTH MINERA.—A. Thomas, Oct. 26: The ground in the 40 west is easier for progress than when last reported, and producing occasional ssones of ore. The tribute pitch in the bottom of the 15 west is not looking quite so well, but will produce about 15 cwts. of lead ore per fathom.

NORTH POOL.—J. S. Phillips, J. Pope, Oct. 22: The shaftmen have been employed during the week timbering from the adit level to within 3 fathoms of the bottom, as required for dividing the engine and skip-shafts for ventilation and safety, which is completed, and they are sinking at the month's price of 23l. per fm. The pitman and staff are placing the main rods in this shaft. The south-east cross-cut has intersected a cross-course, with an easy stratum on its eastern wall, which will facilitate this adit level towards the southern lodes. The north adit cross-cut is being driven at 5l. 5s. per fm., and we expect to cut the lode in about 5 fms. that was seen at the surface, and which yielded good gossan and evidence of magnetic action. The last parts of the engine are delivered, and the closing joints of steam and feed-pipes are being made, so that it will be completed in a few days. The tradesmen are making the iron and woodwork for angle transition rods from perpendicular to underlie of Ballarat shaft, and miners are preparing the shaft for their reception.

NORTH SHEPHERDS.—H. Bennetts, Oct. 26: We are sinking Decimus engine-shaft below the 20 with all speed; the shaft is sinking in a good channel of ground for lead. The lode in the 20 end, west of engine-shaft, is 1½ ft. wide, yielding good stones of lead ore at times, and letting out a large stream of water; in this end we have had a very promising lode for the last 15 fms. in driving. In the 20 end east the lode is 15 in. wide, containing flookan, spar, and mundic; the water is issuing very powerfully from this end; this can be accounted for, as we expect to intersect the north and south lode some time in the present month, but it partly depends how fast it underlies east. In the adit shaft, sinking below the surface, I see no change to notice. We hope to communicate this shaft to the adit level by the end of next month.

NORTH WHEAL BASSET.—George Davey, Oct. 25: Main Lode: Grace's shaft is sunk about 10 fms. under the 112; the ground, although a little more favourable than it has been, is still hard; consequently, our progress in sinking is slow. It will take about three or four weeks to get sufficiently deep to commence the cross-cut in the 122, and, forming an opinion from the underlie of the lode where it left the shaft, I consider there will be from 9 to 12 ft. to drive south to intersect it. The 112 is driven 35 fms. west of Grace's shaft; the lode is 4 ft. wide, worth 4l. 10s. per fm. for tin. The winze under the 102 is holed to the 112, thereby laying open some tin ground, and giving good ventilation for the extension of the latter level. The winzemen are now employed driving the 102 west of Grace's shaft; the lode is 2½ ft. wide, composed of spar, iron, and stones of tin. The 92 is driven 32 fms. west of Grace's shaft; the ground is hard, and the lode not so productive as it has been. Having now commenced to drive the 102 west, and that level being in advance of the 92, I consider it wise to suspend the latter level, and have put the men to drive the 42 cross-cut north of Grace's shaft. The 20 is driven about 12 fms. east of Grace's shaft; this level has generally produced a little copper ore, and in one place, 2 fms. long, the lode was worth 8l. per fm.; in the end it is 18 inches wide, composed of spar and stones of copper ore. The 20 is driven west of Grace's shaft about 5 fms.; the lode is 2 ft. wide, producing stones of copper ore.—South Lode: The winze under the 102 is sunk about 10 fms. under the level; the lode is 2½ feet wide, worth 3l. per fm. for tin. The men are now employed driving the 102 west, where the lode is 3½ ft. wide, composed of spar, peach, gossan, and tin, worth 3l. per fm.—North Lode: Since we have commenced operations in the 32 we have driven the level east of Grace's shaft about 10 fms.; the lode for the first 2 fms. produced stones of copper ore, the next 8fms. the lode has been worth 7l. per fm., and the last 5 fathoms it has been worth from 12l. to 16l. per fm. In the end it is not quite so large, being 15 in. wide, worth from 10l. to 12l. per fm. The lode in the bottom of the level has generally been best; consequently, I consider the chances are favourable that it will also be found productive in the 42. I have, therefore, put four men to drive the cross-cut north of Grace's shaft, in that level, and I calculate there are about 15 fms. to drive to intersect the lode. The rise in back of the 32 is up 3½ fms.; the lode is 18 in. wide, producing a little copper ore. The 20 is driven east of Grace's shaft about 7 fathoms; the lode has produced 1 ton of copper ore per fm.; in the end it is 1 ft. wide, yielding stones of copper ore. The 20 is driven west of Grace's shaft 10 fms.; this level has passed through a piece of ore ground from 4 to 5 fms. long, worth on an average about 15l. per fm. In the end the lode is 15 in. wide, composed of spar, peach, and stones of copper ore. The prospects for copper ore are still more encouraging than they were two months back, as we shall sample to-morrow 40 tons, 35 tons of which are from the ends only. In reference to the next sale of black tin, I find it difficult to make an estimate of the quantity, as, there having been such a long drought, the water has been very little for the stamps, but I hope it will not be much less than the last sale; probably it will be about 4 tons.

NORTH WHEAL ROBERT.—William Godden, Oct. 27: West of Murchison's Shaft: Waymouth's cross-cut is driven north of the old lode in the 30 fm. level 25 fms.; the ground in the end is favourable for progress, and is highly mineralised, with branches of mundic and copper ore. We have intersected an east and west lode in the north end, on the lead lode, which is about 3 ft. wide, composed of capel, iron, and mundic. We have suspended the driving north and resumed the driving east, when we shall soon prove the character of the lode. The No. 4 south lode, in the 52 end, east of Elliott's cross-cut, is not looking quite so favourable as for some time past. We intend cross-cutting this lode next week, to prove whether we are driving on the main part of it or not.—West of Trial Shaft: Scoble's cross-cut is driven south of the No. 1 lode 10 fathoms, where the ground is favourable for progress. The No. 1 tin lode, in the 30 end, is about 2 ft. wide, yielding saving work. All other parts of the mine are just the same as for some time.

PEDN-AN-DREA UNITED.—W. Tregay, J. Thomas, Oct. 22: At the sump, the lode in the 130 east end is worth 20l. per fathom; in the 130 west it is producing stones of tin. In the 120 north cross-cut the branch reported last week is about 8 inches wide, underlying south about 5 inches in a fathom, onsequently it will be in the shaft about the next level; this branch produces occasional stones of tin. The lode in the 120 east rise is worth 3l. per fathom. In the 110 east end the lode is worth 4l. per fathom; in this level west the lode is 6 ft. wide, worth 15l. per fathom, and in the west winze 16l. In the 100 west end the lode is worth 6l. per fathom; in the 100 west rise 3l. per fm. In the 90 west end the lode is poor, and in the rise and Skimmer's it is worth in each 9l. per fathom. At Cobbler's, in the 90 east lode is worth 6l. per fathom, and in the 90 rise 6l. In the 68 west end the lode is worth 8l. per fathom.

PENHALLS.—W. Higgins, J. Nance, October 22: Engine-shaft: Very active operations have been carried on in the cross-cut in the 60, north of this shaft, and the work pertaining to it, during the last three months, with a view of cutting and ascertaining the value and prospects, at this depth, of the lode passed through at the shaft while sinking it about the latter part of last April. This cross-cut has been extended 7 fathoms 0 ft. 11 in. in the quarter. At a distance of 3½ fms. from the shaft we met with a branch 6 in. wide; and, although it happened to occupy the position of where something better was expected, yet we could not fancy it to have had any connection with the lode sought after, seeing the manifest difference exhibited between the two, not only as to their size and worth, but also their constituent parts; consequently, we drove onwards, and not until out of the influence of two intersected gossans were we inclined to come back and rise on the before-mentioned branch. Afterwards, for a seemingly more speedy means of solving the question (seeing our general meeting so near at hand), it was determined to put the men up in the shaft to strip down the lode and open northwards on its course, which we have done for 8 ft. Almost from the commencement it began to decrease in size, and has now dwindled from a width of 5 to 1½ ft. wide, with spots of tin, associated with spar. The attainment of so great a size at one particular point is, in this this instance, due, we believe, to its union with several branches that sometimes augment and enrich the lodes of this district. The 60 cross-cut is driven south of this shaft 9 fms. 4 ft., and its ultimate chances we consider of the highest importance. We have not yet cut Penhalls lode, in the 50 cross-cut, north of shaft, but, according to the general rule, cannot be far behind it. The 50, east of ditto, is for the time suspended, and the men put to drive west on Flat lode, worth 6l. per fm., being the same as discovered in sump-winze. The stope in the end of ditto is worth 14l. per fm. An agreeable change has lately taken place in the 40 cross-cut, south of this shaft, that we hope will prove more propitious than any before experienced, and the event of which will be shortly seen.—Flat-rod Shaft East: North Lode: The 30, east of cross-cut, has been put home to the cross-course, which has heaved the lode south. We now purpose to drive west, where we shall for a long time be free from any such interruptions. In the 20, west of cross-cut, the lode has been for some time disordered by a slide, and from the explorations made our opinion is that it is still further south, in which direction we are now driving in search of it. In the stope in back of ditto the lode is 20 in. wide, worth 8l. per fm. The lode in the 20, driving west, north of heave, is 2 ft. wide, worth 12l. per fm., and the stopes in back of ditto 15l. per fm. In the 20, driving west, south of gossan, the lode has improved, now 20 in. wide, worth 12l. per fm.; and in the stopes in back of this level it is 20 in. wide, worth 14l. per fathom. The 20, driving east, south of gossan, is worth 6l. per fm. In the stopes in back of ditto the lode is also worth 6l. per fathom. We can but here remark, although that success we had hoped has not yet attended our labours in either of the cross-cuts, yet no one can deny but that it is just and reasonable to look for such, which would, with the tin ground now laying open, at once since us in a good and safe position.

POLBREEN.—Oct. 25: We have commenced driving the 22, west of the old sump-shaft, in search of Tregay's lode, but have not met with anything more than a few branches with spots of tin; there has been only 3 ft. driven, as the men were employed a great part of the month in stripping Dorcas's shaft and levels, and sending up the timber, &c. The driving we hope will now be contined without any further hindrance; the ground is hard and spare for driving; it is set at 11l. per fm., but having a little tin in the bottom of the 12, and the deepest point more than 4 fathoms from this level, we think it right to put the 22 under it. The tribute pitches have improved since the last setting-day. We shall sell our two months' tin for September and October next time, which we calculate will leave a profit.

PRINCE OF WALES.—W. Gifford, Oct. 25: We intend taking down the lode both east and west of Watson's shaft, at the 30, by the latter part of this week.

PROSPER UNITED.—S. Lean, Wm. Millett, Oct. 27: The lode in the 70, west of Hand's shaft, is 5 feet wide, and will produce 4 tons of ore per fathom, and worth 10l. per fathom for tin. We have not taken down the lode at Hand's shaft since we commenced sinking below the 70; the ground is favourable. The lode in the 70 west, north of the elvans, is 2 feet wide, worth 5l. per fathom for tin and copper. The lode in the 60 west is 3 feet wide, and will yield 2 tons of ore per fathom. The lode in the 50 west is small, containing only stones of copper. The lode in the 70, east of Hoskings's engine-shaft, is large, and worth 6l. per fathom for tin. All other places are without change since our last report. We sampled on Tuesday last 310 tons of ore for the month.

PROVIDENCE.—W. Hollow, Oct. 26: There is no change to notice in the Standard lode. The new south lode, in the 65, is worth 40l. per fm. In the 75 it is 2 ft. wide, of a promising character. In the 85 it is small. The bunch of lode south, in the 75, is worth 15l. per fm. No. 1 stope is worth 20l. per fm. No. 2 stope is worth 50l. per fm. The stope in the cross-course is worth 30l. per fm. The stope on the branch is worth 50l. per fm. We are opening on three of the lodes discovered in the cross-cut towards Hawke's shaft, each producing tin, and of a very promising character, but they are not clear of the cross-course. Driving west of the cross-course, on the south branch, has been resumed in the 85 and 65. These ends have improved in appearance, and we hope to open valuable tin ground in this direction. The following is our setting for Nov.:—74 men on tutwork, and 100 men on tribute, at an average of 9s. in 1l.

REDMOOR.—T. Taylor, Oct. 25: The south engine-shaft is now 11 fms. 4 ft. below the adit level; at this point the lode is 5 foot wide, principally mundic, prian, flookan, and soft spar, intermixed throughout with black copper ore, and shows every indication of an improvement at no very great depth. As our object is to get down with all speed, we shall endeavour to sink 10 fms. deeper under the steam whim, without cutting shaft plat, fixing penthouse, &c.; we have, therefore, set to nine men, to cut ground for bearers fix cistern, heave our lift, fix new bottom, and sink 2 fms., as per bargain, 38l.

RHAFNA.—M. Wasley, Oct. 21: As I am about to resign charge of the works, I beg to make a few remarks upon the present state and prospects of the mine. When I first took the direction for the company, I commenced by draining the old pump-shaft at the end of level B, where the lode was found larger and richer than first represented. I then pursued the clearing, driving, and securing of level C. In the progress of this driving a winze was found in the bottom of the level, which I cleared and sunk 6 fms., and found the lode worth more than 1 ton of ore to the fathom. The water then becoming too much for the hand-buckets, the men were put on the further driving. At first the lode was found productive sooner than anticipated, but it fell off in the progress of the progress of the driving, and became mixed largely with blende. This driving and the stoping costs were, however, paid with a profit by the produce, which has been 12 tons of fine lead ore, and 27 tons of blende. This level should be continued on to under the old pump-shaft, in level B, about 105 fms. further, and no doubt good stoping ground will be laid open, which would employ a dozen hands at a good profit, and thus secure dividends within a very short time. In all probability the blende which now predominates so largely and unexpectedly will disappear, or become greatly reduced in the driving into the hill. At all events, it has been ascertained to decrease at the D level, and at the bottom of a winze sunk in that level as an experiment the blende had all but absolutely disappeared, so that the prospect is good.

RHEIDOL.—Oct. 22: Rhurruggus Engine-shaft: In the 12 fm. level, driving west on Gwaithcoch, the lode is 4 ft. wide, composed of clay-slate, spar, and strings of lead, but not to value. In the cross-cut south we have cut a lode 18 in. wide, with a branch of blende 6 in. wide, solid. We shall extend the cross-cut a fathom or two further, as, from the appearance of the ground, there is more lode before us. The intermediate level west is yielding 2 tons of blende per fathom. In Rhurruggus deep adit level we have discontinued driving the cross-cut, as we consider from the character of the ground there is no more lode in that direction. In the Midway level west the lode is 2 ft. wide, of flookan and spar.—Nantglass: In the 10 west the lode is 2 ft. wide, composed of hard clay-slate, spar, and mundic, but not enough to value. In Foxpath cross-cut the lode in the level driving east is 2 ft. wide, composed of slate, spar, and strings of lead, the end letting out water. The lode in this end has improved a little during the past week.

ROARING WATER.—H. Thomas, Oct. 25: The sinking of Gilliman's shaft is going on well; I look on this ground as being more mineralised than when last reported, the mundic is increasing in quantity, with joints of yellow copper ore; I hope soon to see a good change here. In the end driving west from Grady's shaft, on Grady's lode, there is scarcely any change to notice since last week. The same will apply to the end driving west upon Bushe's shaft; these levels will shortly be communicated with each other, which will materially facilitate future operations. I hope soon to advise you of having a vessel to ship the ore, which I am most anxious to do.

ROSEWARNE UNITED.—T. Richards, E. Carthew, Oct. 27: We have resumed the sinking of Giesler's engine-shaft below the 50. The lode in the 50 end west contains more ore. In the 40 west there is a good prospect of meeting with the branch of ore seen in the upper levels. The 30 end, west of Boundary shaft, is looking very well, worth 16l. per fm. The rise above the 20 is worth 10l. per fm. The pitches are yielding a good quantity of copper ore, and every prospect of a good sampling on Nov. 22.

SILVER MOUNTAIN.—J. Morgan, Oct. 20: We are ready to sample 20 tons. The stopes promise to turn out lead as before, averaging about 15 to 20 cwts. per fathom both east and west. We are ready to commence sinking.

SILVER VEIN.—E. Burn, Oct. 20: Saturday last being our pay and setting-day, we set the following bargains and tribute pitches:—The 60 to six men, at 3l. 17s. 6d. per fathom, for 8 fms., or the month; the ground is favourable for progress, and to all appearances it will require but very little timber. The ore part of the lode is smaller than last week; we have just a cross branch of quartz, which is the cause. The 50 north to six men, 7 fms., or the month, at 3l. 17s. 6d. per fm.; the lode is getting more settled to what it was last week, producing a little ore. In the course of a fathom of two more driving we shall get under the ore ground gone down in bottom of the 40. The 40 north to four men, at 3l. per fm.; the lode is 5 ft. wide, composed of flookan, quartz, and carbonate of iron, producing stones of ore. The regular ore-bearing part appears to be at a splice, which is a frequent occurrence, the lode being given to make splices. All the wheeling in the 40 and 50 to three or more men, as required, for three months, at 11l. per month. The whim-drawing for three months, at per hundred kibbles, in the 30, at

5s. 6d. per hundred; in the 40, 11s.; in the 50, 13s. 6d., and in the 60, 16s.; all the timber at 1d. per foot; coals at 1s. 10d. per ton; ores from the mine to station at 1s. 8d. per ton.—Tribute: A pitch in the 50 to two men and one boy, at 10s. in 1l., for one or two months. No. 2 pitch, in the 50, to two men, at 11s. in 1l. Netherton's pitch, in the 40, to four men, at 12s. in 1l. Mitchell's pitch, in the 40, to three men, at 12s. in 1l. Hambley's pitch, in the 40, to three men, at 12s. in 1l. Pennase's pitch, in this level, his time not being out. Pryor's pitch, in the 30, to four men, at 9s. in 1l. I have also set the trial shaft to sink and stope on tribute to two men and a boy, at 12s. in 1l. This being a long distance further north than any of our underground workings, there are good chances of making some discoveries. We have the standing-lift fixed in the 60, and all other work completed at the shaft, which I have set again to-day to nine men, to sink 10 fms., for 150l., at per bargain, and 5l. premium if completed in four months from this date. We are at present in full work at all points, and everything progressing satisfactorily.

SILVER VEIN.—E. Barn, Oct. 26: The sumpmen are making fair progress in sinking below the 60, and the ground favourable. The 60 north is extended about 5 fms. from shaft; the lode is 2 ft. wide, composed of flookan and soft friable quartz, producing stones of argentiferous copper, but not a sufficient quantity to value; the ground has been unsettled for the last 2 fms. driving, in consequence of several small cross branches of quartz running through country, which has rather disordered the lode at present. We have about 15 fms. to drive this end to intersect No. 1 east and west lode, over which the principal ore ground dips. In the 50 the lode is 3½ ft. wide, and getting more settled, producing saving work, and improving every foot we drive; we expect to get into a good-paying lode daily, as we are getting under the ore ground gone down in the 40. The lode in the present end in the 40 is poor. I have put the men to-day to drive a little west, as I think we have not got all the lode. By driving a few feet in that direction will prove it. The tributers at the trial shaft have cut a nice branch of the lemon-coloured gossan and the grey argentiferous copper. If it continue the men will get good wages, and also open up a new shoot of ore ground. All other pitches are without change to notice since last reported on. Our engine is doing good duty, and keeping the water sufficiently to sink by working nine strokes per minute.

SORTRIDGE CONSOLS.—J. Richards, Oct. 27: In Mayne's, or the 50 cross-cut south, the ground is easy, and good progress is being made. In Doidge's rise, in the back of the 50 west, and west of the ventilating shaft, the lode continues large (from 4 to 5 ft. wide), composed of capel, mundic, peach, quartz, prian, and a little ore. In the 40, east of John's cross-cut, on No. 1 south lode, the lode is of fair size (2½ ft. wide), and more promising, being composed of capel, quartz, and good stones of ore. In the 20, east of the engine-shaft, on the south part of the main lode, the lode is 8 in. wide, consisting of capel, quartz, and mundic. In the deep adit level the lode is not as yet intersected to the east of the cross-course; the ground is favourable.

SOUTH CARADON WHEAL HOOPER.—W. C. Cock, Oct. 22: No. 2 south lode, in the 54, both east and west, looks a little better than when I wrote last. I re-set both these ends yesterday, at 5l. per fathom. In the 54 east, on No. 1 south lode, the ground is at the present time in a very unsettled state—re-set at 40s. per fathom; the lode is spotted with copper ore. In the 54 cross-cut south the ground is not quite so favourable for progress, being traversed with small branches of spar, which makes the cleavage rather difficult. We have suffered much this week for the want of air, not being able some days to approach the ends by many fathoms; I fear it will continue in this state until the wind changes to some other point.

SOUTH CRENVER.—E. Chegwin, Oct. 26: In the adit end, driving east and west of the cross-cut, on the north lode, the lode is 9 in. wide, producing quartz, mundic, and spots of copper ore, and the ground is more favourable for driving.

SOUTH DARREN.—J. Boundy, Oct. 20: The lode in the 50 west is producing good stones of lead ore—promising. The lode in the 40 and 30 fm. levels west are about the same in value as for some time past. The lode in the 20 west is 2 ft. wide, worth for lead and copper 10l. per fathom, with a very promising appearance. In the other points of operation there is nothing new to notice.

SOUTH DOLCOATH.—W. Roberts, Oct. 26: The sinking of the flat-rod shaft under the 36 is progressing favourably; in it the lode continues 1 ft. wide, producing 1 ton of ore per fathom. In the 30, driving west of shaft, the lode is 1 ft. wide, yielding 1 ton of ore per fathom.

SOUTH EXMOUTH.—J. P. Nicholls, George Maunder, Oct. 26: The ground in the engine-shaft is still favourable, and good progress is being made in sinking. There is no change in the 75 south since last report. The lode and strata in the 75 north present a very promising appearance, but not so productive of lead at present as last reported, now yielding 3 cwts. per fm. The lode in the 45 north still continues to present the most favourable indications, and is yielding a little saving work. The cross-cut being put through the lode, just behind the end, has reached the east wall; the lode is full 17 feet wide, consisting of friable quartz, barytes, and gossan, the lead being in the west part of the lode. There is no change in the 30 north since the last report. The same remark will apply to the winze sinking in the bottom of the 45 west.

SOUTH HERODSFOOT.—R. Goldsworthy, Oct. 26: During the last fortnight we have made good progress in sinking, we have just attained sufficient depth for the plat, and shall lose no time in getting in dividings, casing, and footwall, which I hope to commence on Monday.

SOUTH LOVELL.—Wm. Chappell, Oct. 24: We have not made much progress in forking the water. I am looking out for an engine; as soon as I hear of one I will write to you. The men are now engaged opening a quarry to raise stone for the engine-house. The lode is all taken away for tin for a great length on the line of lodes; it is evident we shall have a good mine when we can get down under the old men's workings.

SOUTH WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Oct. 22: The lode in the rise above the adit against the new shaft is 1 ft. wide, composed of quartz, prian, and gossan; here we are making good progress, the ground being very favourable. The ground in the shaft sinking from surface is stiffer than we expected, but as it nears the lode we are thinking it will ease.

SOUTH WHEAL TOLGUS.—Oct. 26: Youren's Lode: The lode in Michell's engine-shaft, sinking below the 150, is 2 ft. wide, composed of peach, mundic, and spar, with occasional stones of ore—a kindly lode. In the 150 east the lode is 2 ft. wide, composed of spar and mundic. The lode in the 150 west is 18 in. wide, consisting of peach, mundic, and spar, with stones of ore, but not of much value. In the 140, west of rise, the lode is 18 in. wide, consisting of spar, mundic, and stones of ore. The lode in the 130 west is 1 ft. wide, looking better than when last reported, now producing 1 ton of ore per fm. We have four stopes over the back of the 130 west, each stope yielding 3 tons of ore per fm., but we would remark that two of them are nearly worked out. In the 120 west the lode is 1 ft. wide, producing 1 ton of ore per fm. The stope in bottom of the 110 west is producing 2 tons of ore per fm. In the 90 west the lode is small and unproductive. The lode in the 78 west is 10 in. wide, chiefly consisting of spar.—New South Lode: In the 66, east from the rise, the lode is 1 ft. wide, unproductive.—South Lode: In the 140 east the lode is 2 ft. wide, producing 1 ton of ore per fm. The lode in the 130 east is 2¼ ft. wide, producing good stones of tin ore. In the 120 east the lode is 1 ft. wide, unproductive. In the rise over the 110 east the lode is 18 in. wide, consisting of flookan and soft spar. We have taken the men from the 110 fm. level end to put up this rise. The lode in the 100 east is 3 ft. wide, unproductive. The stope in the bottom of the 100 east is worth for tin from 10l. to 12l. per fm.

ST. DAY UNITED.—F. Pryor, J. Cock, Oct. 22: Opple's engine-shaft, sinking below the 184, is worth fully 50l. per fm. The 184, east of shaft, is worth 10l. per fm. In the 184, west of Billing's, we are not clear as to our driving on the best part of the lode, and in order to prove it we have this day set a cross-cut south to prove the same. The 174, west of shaft, is worth fully 15l. per fm. The 164, west of shaft, is worth 10l. per fathom. The 174, east of Opple's shaft, has a good appearance. A winze sinking below the 164, east of this shaft, is worth 10l. per fm. The 124, west of Trussall's shaft, is worth 15l. per fathom. The 124, west of same shaft, on the copper lode, is producing stones of good ore; ground soft for driving. The 104, west of Trevivian's, on the tin lode, is worth 10l. per fm.—Bissoe Pool District: Richard's shaft, sinking below the 140, is producing 2 tons of ore per fm. In the winze, sinking below the 190 the lode will also produce 2 tons per fm.—Wheal Maid: The 20, west of Williams's, will produce 1¼ ton per fm. The winze sinking below the 10 is worth for tin 10l. per fm. Our pay and setting went off very well.

ST. IVES WHEAL ALLEN.—John Nancarrow, Joshua Daniel, Oct. 26: The 20 west looks more promising, but hitherto there is nothing to value. The stope in the back is worth 6l. per fathom. In the winze below the level the lode is small. The east stope, below the 20, is worth 5l. per fathom. The middle stope is worth 6l. per fathom. The west stope is worth 4l. per fathom. There is no alteration in the 40 east. The lode in the 40 west is worth 6l. per fathom. The 30, driving north, east of shaft, yields stones of tin. The stope at Charles Frederick's is worth 5l. per fathom.

ST. JUST CONSOLS.—Wm. Williams, Oct. 25: At the engine-shaft we have now completed cutting the fork 5 fms. long and 6 ft. deep; we shall now only want to pump the water 6 out of the 24 hours, and intend at once to extend the 20 east and west. On the Guide we have commenced sinking the winze below the deep adit level; the lode of tin in the winze is 3 ft. wide, which I hope will hold down.

ST. JUST UNITED.—J. Carthew, Oct. 26: Engine-shaft—Saveall's Lode: In the 62 fm. level east we have a very kindly lode, 2½ ft. wide, worth 5l. per fm., driving for 3l. 10s. per fathom. The stopes in the backs we are working for 30s. per fathom. The 62 fm. level west is now in the killas; the lode 2¼ ft. wide, all with tin ground of a very promising character, not only in the ends but in the bottom of the levels, holding out every inducement for the further sinking.—North Lode: In the 74 fm. level we have a very good tin lode, 1 ft. wide, worth 4l. 10s. per fathom. The 74 east we are driving for 55s. per fathom by the side of the lode, which we shall take down previous to the next setting. The winze sinking below the 62 fm. level is now down 11 fms. a good lode standing in the side; we shall have this holed to the 74 fm. level with all speed. We have holed in the 62 fm. level from the Little Bounds lode to the branch south of the north lode; on the branch we have set one pitch on tribute, to four men, at 10s. in 1l.; and on the Little Bounds lode, one to four men, at 11s. in 1l.; we have three more pitches to set on the lode and branch.—Red Dipper Shaft—Wheal Owl Lode: The 40 fm. level north is worth 5l. per fm.; driving for 50s. per fm.; and the 40 south is looking well; the lode is worth 6l. per fathom; driving for 55s. per fathom. In the 20 fm. level east, on Wheal Venton lode, we have a very kindly lode. On the whole, the mines are looking well. Should the present rains continue for some time, so that the springs be not again dried up, I look confidently to increased returns of tin, as latterly, for many months, our dressing operations have been much retarded from want of a supply of water.

TORBAY HEMATITE IRON.—S. Paull, Oct. 26: The appearance of the end driving west from shaft is much improved since my last report, is producing iron of good quality, and possesses every characteristic requisite to constitute a lasting and producing lode. The eastern end from shaft is still poor, and intersected by lime-rock. The stopes below the Derrick shaft are still producing a fair quantity of good iron, and shows no diminution in quantity or quality. The middle stopes have improved since my last, and from which we hope to raise a large quantity of iron. The shallow stope, from new cutting, are producing iron in paying quantities, but not to the amount it has in times past, although a great number of tons remain to be taken away. From the trial shaft sunk near the old workings we are raising a quantity of good iron, which is adding much to our returns, and will still continue to do so. In a trial pit sinking near the eastern boundry we are in hopes of reaching the rich bunch of iron worked upon in the adjoining mine.

TRELOWETH.—J. Richards, Oct. 27: The lode in the 144 end east is improving in value, and worth 14l. per fathom. The 134 end east is worth 8l. per fathom. The 124 end east is worth 8l. per fathom. The 110 east is spotted with ore. The 90 end east contains a little ore, and easier ground. the 80 end east is in good ground. The 134 end west is not quite so hard. In the 134 cross-cut south there is no change. The stope in the back of the 144 is worth 20l. per fathom. The stope in the back of the 134 is worth 16l. per fathom. We sampled on Tuesday last (computed) 160 tons of copper ore.

TRELYON CONSOLS.—R. James, E. Pooley, Oct. 27: The branch in bottom of the 20 is very much fallen off in value and size, being worth 2l. per fm. No other change.

TRENCROM.—William Arthur, Henry Woolcock, Oct. 27: The lode in the 110, east of Hollow's, is 1 ft. wide, worth 4l. per fm. The lode in the 100, east of Hollow's, is 6 in. wide, worth 2l. per fm. The lode in the winze sinking below the 100, east of Hollow's, is 1 ft. wide, worth 3l. per fm. The north lode in the 100, east of Giesler's engine-shaft, is 10 in. wide, worth 2l. per fm. The lode in the 90, west of Giesler's engine-shaft, is 16 in. wide, worth 3l. per fm. The lode in the 90, east of Hollow's, is 16 inches wide, worth 3l. per fm. The lode in the 80, east of Hollow's, is 10 in. wide, producing a little tin. The lode in the 70, east of Hollow's, is 1 ft. wide, saving work for tin. The lode in the 60, east of Hollow's, is 14 in. wide, worth 3l. per fathom. The lode in the 60, east of flat-rod shaft, is 1 ft. wide, worth 6l. per fm. The lode in the 50, east of Hollow's, is 18 in. wide, worth 4l. per fm. The lode in the 40, east of Hollow's, is 18 in. wide, worth 3l. 10s. per fm. The lode at Dawe's shaft, sinking below the adit, is 18 in. wide, producing good stones of tin.

TREREW WHEAL ROSE.—J. Middleton, Wm. Billing, Oct. 27: We have nothing new to speak of during the last week's sinking of Vigar's engine-shaft. The ground is still good, and easy for sinking.

TREVENEN AND TREMENHEERE.—J. Medlen, William Tippett, Charles George, Oct. 26: Our setting, on Saturday, runs thus:—The new sump-shaft to sink for the month, below the 150, by eight men and four boys, at 16l. per fm. This month's sinking will reach the 162; the lode is worth 18l. per fm. Trevenen engine-shaft to sink below the 162, by eight men, at 17l. per fm.; the lode is worth 10l. per fm. The 162 fathom level end to drive east of the above shaft, by six men, at 4l. per fathom, worth 12l. per fm. A stope in the back, by six men, at 30s. per fm., worth 8l. per fm.; this level to drive west, by eight men, at 3l. per fm., worth 6l. per fm. The 150 to drive west of new sump, by two men, at 3l. per fm., yielding a little tin, but not sufficient to value. No. 1 stope, in the back, by four men, at 30s. per fm., worth 7l. per fm. No. 2, by six men, at 50s. per fm., worth 5l. per fm. No. 3, by six men, at 35s. per fm., worth 7l. per fm. The stope in the 140, east of old sump, by six men, at 60s. per fm., worth 6l. per fm. We also set to 10 tributers, at 11s. 6d. in 1l.

TREWEATHA.—T. Foote, J. Scoble, Oct. 24: We have intersected the lode in the engine-shaft sinking below the 40, but cannot say anything about its value, as we are obliged to stop sinking; the lode being so soft that it soon ran the shaft full, and we had some difficulty in saving the bottom lift; this has been made secure, and the shaftmen are now engaged in putting in timber at the shaft above the 40, so as to take up the weight of the lift lately put into the cistern in the 40, owing to the lode being so near the bearers it has made the ground weak; we shall complete this by to-morrow, after which we shall commence sinking the shaft again. We have found some splendid stones of lead, that were washed out of the lode as soon as it was cut into, and no doubt but we shall find a good lode in sinking: we shall be able to say more about the value and character of the lode in our next report; but looking at the lode where cut in the 40, and only about 4 fms. above where we cut the lode in the shaft, and the fine stones of lead that are coming out of the lode, we may fairly calculate upon finding a good lode in sinking to the 50; should the lode improve as it did in sinking from the 30 to the 40, there will not be any reason to doubt but that we shall have a good mine. The lode in the 40 south is 2¼ feet wide, producing saving work, and although not rich, is of a promising appearance, and likely to improve. The two stopes in the back of this level are producing 4 cwts. of lead each per fathom. The lode in the 40 north has improved in character and value, now being 3 feet wide, and yielding 6 cwts. of lead per fm.; a very fine looking lode. The lode in the 30 south is 2¼ feet wide, producing stones of lead. The stope in the back of this level is worth 6 cwts. of lead per fm. There is no other change to notice in this mine.

TRUMPET UNITED.—G. R. Odgers, Oct. 22: The lode in the engine-shaft is 6 in. wide, with good stones of tin. The lode in the 60 west is 1 foot wide, yielding a little tin. The lode in the winze sinking below the 50 is 6 in. wide, also producing a little tin. The lode in the 25 west is 6 in. wide, and worth 7l. per fm. The lode in the rise in the back of the 25 is 6 in. wide, and worth 7l. per fm. The lode in the 15 west is worth 6l. per fm. The lode in the stopes below the 15 is worth 6l. per fm. The lode in the shaft is small, but producing good work for tin.

TYNE HEAD.—G. Millican, Oct. 21: I expect the men will complete their contract this week—that is, will finish the 15 fathom cutting through or across the "backbone;" the ground is exceedingly hard, and it is very difficult to say what price another bargain will be taken for.

WENTNOR.—J. Roberts, Oct. 26: At Grestan we are continuing the drivage of the 60. There is no alteration in the character of the ground, it being still composed of hard spar. At Butler's Field the ground is taking a favourable change, there being spots of ore, indicating that we are drawing near to a vein of lead, which we hope to cut daily.

WEST BASSET.—W. Roberts, Oct. 26: On the middle lode, the rise in the back of the 52 is holed, and thereby opened a good piece of tribute ground; we are now preparing to resume driving the same level east, in which the lode is 2 feet wide, producing 1¼ ton of ore per fathom. In the same level, west of the cross-cut, the lode is 1¼ ft. wide, yielding good work for tin.—Engine Lode: In the 114 west the lode is 2 ft. wide, turning out 1 ton of ore per fathom. In the the 104 west the lode is 1¼ ft. wide, producing stones of good ore.—Tribute Ground—Caunter Lode: In the 75 east the lode continues 2 ft. wide, with stones of ore—saving work. In other parts no alteration to notice. We have sampled this morning (computed) 273 tons of ore.

WEST BEAM.—Wm. Hosking, Oct. 27: We have not yet intersected the new north lodes in the 76 cross-cut, north of Parry's shaft, although we have had changes in the strata indicating their proximity, and an improvement has to-day been met with which renders us confident of having the lode within a few days. The 55 end, driving east of Parry's, on North Beam lode, continues very good, worth quite 12l. per fm. The new north lode, in the bottom of winze sinking in bottom of the 55, east of Parry's shaft, is worth 14l. per fm. The other points of the mine continue without any material change.

WEST CARADON.—Wm. Johns, Oct. 25: Since our last report, sent you for the meeting, we have intersected the 38, west of Hallett's shaft; the south part of Menadue lode is about 1¼ ft. wide—tribute ground. The men are now engaged putting up a rise to communicate with the winze sinking below the 27; this work we hope to accomplish against our next setting-day. We are also rising in the back of the 104, on Jope's lode, for the advantage of working tribute pitches; so far the rise has opened out profitable ground. The clearing and securing of the 128 cross-cut, south of Fox's, has been very satisfactory, and will be pushed on as fast as possible, until we reach the last-named lode (Jope's), believing our chances are great. At Pryor's we have suspended operations, and have drawn the pitwork up to the 17. We are now engaged cutting ground for dam at this level, and when completed the remainder of the pitwork will be drawn to the surface.

WEST MARIA AND FORTESCUE.—Wm. Skewis, J. Donnal: At Maria engine-shaft the skip-road is completed 5 fms. below the 50, and we shall at once commence clearing to the bottom of shaft. In the 40, west of said shaft, no lode has been taken down since our last report; the ground, however, is improved, and good progress is being made in driving. In driving the 20 fm. level cross-cut we have intersected a branch about 3 in. wide, containing mundic, quartz, and good stones of copper ore; this being so near the lode we cannot but entertain a very good opinion of our prospects at this point when we intersect the Capel Tor lode.—New Shaft: In the cross-cut north at the 12 we have cut the south wall of the Capel Tor lode, but shall not be able for a day or two to say anything of its value. The winze sinking on said lode, in the bottom of adit, will yield 3 tons of copper ore per fm., and looking promising for further improvement.

WEST SHARP TOR.—W. Richards, Oct. 25: A further improvement has taken place in the 162, east of No. 4 cross-cut, during the past week; the part of lode carried contains quartz, iron, splendid gossan, and grey copper ore, worth 15l. per fm. The part of lode carried in the 162, west of No. 4 cross-cut, assumes a very healthy and promising appearance, containing capel, quartz, iron, mundic, and good grey copper ore, worth 10l. per fathom. The ground in No. 5 cross-cut has improved a little for progress, and very favourable for the production of copper ore.

WEST WHEAL TOLGUS.—Oct. 26: South Lode: We have taken down a part of the lode in Taylor's engine-shaft, below the 75, for 2¼ ft. wide, no south wall; as far as it is cut through it is orey throughout—a good lode. In the 75 east we have laid the lode open for 2¼ ft. wide, yielding fully 3 tons of ore per fm., and no south wall, therefore we cannot say its size nor its full value; the lode is wet, hard, and troublesome to cut through in shaft and ends. In the 75 west we have cut into the lode 4 ft., yielding fully 5 tons of ore per fathom, and no south wall—a splendid lode. In the 65 fm. level west the part of the lode we are carrying is 5 ft. wide, yielding 5 to 6 tons of ore per fm., and the lode in the rise over the back of the 65 is 4 ft. wide, producing fully 4 tons of ore per fm. The stope in the back of the 59 is producing 2 tons of ore per fm. In the back of the 65, east of Taylor's engine-shaft, the stope is producing 2 tons of ore per fathom.—North Lode: In the 65, east of Taylor's engine-shaft, and east of the cross-cut, the lode is 2 ft. wide, producing 1½ ton of good ore per fm., a very promising lode. We have two stopes over the back of the above-mentioned level, east and west of rise, each stope yielding 3 tons of ore per fathom. The ground in the 50 fm. level cross-cut north is moderately easy.

WEST WHEAL TREVELYAN.—J. Harris, Oct. 22: We have cut the south wall of the lode in the 68, west of cross-course, and the lode is full 4 ft. wide, composed of beautiful white quartz, peach, and prian, with black and good spots of grey ore; it is a very pretty looking lode, and I should not be surprised if we meet with a good bunch of ore at any time. The 68, east of Charles shaft, is without change.

WEST WHEAL VOR.—J. Southey, Oct. 26: The 50-inch cylinder engine went to work on Saturday last very satisfactorily. We are now again sinking the shaft below the adit level by nine men, and also driving the adit cross-cut north by four men, as fast as we possibly can.

WHEAL AGAR.—Wm. Roberts, Oct. 24: The following tutwork bargains were set on Friday last:—To drive the 110 cross-cut, south of Windstow shaft, by six men, at 22l. per fathom. To rise in the back of the 100, east of the western shaft, by six men, at 7l. per fathom. To rise in the back of the 100, east of Winstow shaft, by four men, at 2l. 10s. per fathom. To drive the 110 east and west of whim-shaft, by nine men, at 8l. per fathom. To drive the 90 south-east of Winstow shaft, by four men, at 6l. per fathom. To drive the 90 west of Winstow shaft, by two men, at 8l. per fathom. To drive the 90 south of Winstow shaft, by two men, at 5l. per fathom. To sink the winze in the 90, east of the western shaft, by two men, at 6l. per fathom. To sink the winze in the 70, east of the whim-shaft, by four men, at 5l. per fathom. To sink the 70, on the north lode, by four men, at 3l. 10s. per fathom. To drive the 60 west of the cross-cut, by two men, at 5l. 10s. per fathom.

WHEAL CREBOR.—J. Gifford, Oct. 25: Saturday last being our general setting-day, the following bargains were set:—The 96 east, by six men, to carry all the lode, stent 5 fms., at 4l. per fm.; lode 3 ft. wide, yielding 1½ ton of copper ore per fm., a very promising end. The 84 east, by four men, stent the month, at 3l. 15s. per fm.; lode 1¼ ft. wide, yielding saving work for dressing. The 72 east, by four men, stent the month, at 5l. per fm.; lode 3 ft. wide, yielding 1¼ ton of copper ore per fm.; this end appears to be in a new piece of ore ground, as it is full 50 fms. east of the western end. The 48 east, by four men, stent the month, at 3l. per fm. The 96 west, by six men, to drive by the side of the lode, stent 4 fms., at 4l. 5s. per fm.; lode 6 ft. wide, yielding 2 to 3 tons of copper ore per fm.; although this end has fallen off in value, yet I think it only temporary, as the lode still maintains its size and character—a strong, kindly lode. A rise in back of the 94 west, against the winze in bottom of the 84, by the side of the lode, by six men, stent to hole, at 4l. 10s. per fm. A winze in bottom of the 84 west, by six men, stent to hole, at 6l. 10s. per fm.; this we hope to complete in a month. A pitch in back of the 14 east, for two months, by two men, at 9s. in 1l. Our proposed sampling will be all at Morwellham to-morrow (Wednesday). Cock's shaft is down 7 fms. below the 96; the lode still maintains its size and character, being full 6 ft. wide, producing good stones of copper ore, a very promising lode.

WHEAL CURTIS.—H. Skewis, Oct. 22: We have commenced sinking the engine-shaft below the 40, by nine men and four boys. The 40 cross-cut north is progressing favourably. The lode in the 30 west is 5 ft. wide, composed of spar, mundic, jack, and good stones of copper ore, with a promising appearance. The lode in the rise in back of this level is 2 ft. wide, producing saving work for copper ore. The old engine-shaft is cleared to the 20, and skip-road will be complete for drawing by Tuesday next.—Dumpling Lode: We have set Square's shaft to sink to-day below the 20, by six men and three boys; the lode in the shaft is 2½ ft. wide, producing saving work for copper. The lode in the 20, east and west, is 2½ ft. wide—a very promising lode indeed, worth about 2l. per fm. for copper. The lode in the winze sinking below the 10 is 3 ft. wide, producing stones of copper ore. The lode in the 10 end west is disordered for the present by some cross branches passing through the country. We shall sample about 20 tons of copper ore on Tuesday, if all goes well.

WHEAL EDWARD.—G. Rowe, Oct. 22: The lode in Nos. 1, 2, and 3 stopes, in the bottom of the 81 fm. level, is improved, and worth respectively from 8l. to 12l. and 16l. per fathom. The lode in the 61 west is improved in size, and producing some good saving work. No other change.

WHEAL EMMA.—T. Bennett, Oct. 26: We resumed the working of the stopes in back of the 80 about a fortnight since, and have broken 4 tons of ore from the same for this sampling; it continues to yield 1 ton of ore per fm. We are still extending the cross-cut north in the 20; we have cut several branches, but I still recommend driving it a little further, as I am not satisfied as to its being the north part of the lode. We are putting up a rise in back of this level for ventilation and convenience for bringing away the stuff. The 10 east east looks much the same as last reported. The 34 east has very much improved since my last; the lode will now yield 1¼ ton of good ore per fm. The tribute department looks much the same as for some time past. We shall sample at Plymouth, to-morrow, 172 tons of ore of our usual quality.

WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Oct. 27: The lode in the 100 east is looking better, and so is the 90 west; the former is worth 15l. per fm., and the latter producing good saving work.

WHEAL GRENVILLE.—G. R. Odgers, Wm. Bennetts, Oct. 22: The lode in the 120 west is 2 feet wide, yielding tinny work; the tin is getting stronger. The lode in the 110 east is 18 in. wide, yielding tinny work. The lode in the 110 west is 2 feet wide, producing good work for tin, worth 15l. per fathom; the tin appears to be coming down over this end. The lode in the stopes above this level is worth 20l. per fathom, and improving. The lode in the 100 east is 4 feet wide, and producing good work for tin, worth 10l. to 12l. per fathom. The lode in the stope above the 100, east of the new shaft, is worth 12l. per fathom. There are two stopes above the 100, west of new shaft, worth 25l. and 10l. per fathom. The lode in the 90, east of new shaft, is 20 inches wide, yielding tinny work, worth 8l. per fathom. Two stopes in the back of this level worth 15l. per fathom each. The lode in the 90 west is 18 in. wide, and improving very much in appearance, producing stamping work; the stopes in the back are worth 25l. per fm. The lode in the 80 east is not yet out of the influence of the cross-head mentioned in our last report. The lode in the rise above the 80 is 3 feet wide, and producing good work for tin, worth 12l. per fathom. The stopes above this level are worth 26l. per fathom. The lode in the 66 west is from 2 to 3 ft. wide, and yielding tinny work, worth 10l. per fathom. The lode in the rise above the 66, from new shaft, is 2 feet wide, and producing tinny work, worth 10l. per fathom. We are getting on very well with the sinking of the new shaft from the surface, in which we find a number of droppers carrying good tin, dipping north towards the lode.

WHEAL GRYLLS.—E. Rogers, J. Pope, Oct. 27: Fisher's Lode: In the 40, driving east of Annie's engine-shaft, the lode is worth 5l. per fm. In the stopes in the back of this level the lode is worth 4l. per fm. In the 30, driving east of Grylls shaft, the lode is worth 11l. per fm. In the rise in back of this level the lode is worth 8l. per fm. In the 10, west of Jones's shaft, the lode is 1 ft. wide, unproductive.—Standard Lode: In the western shaft sinking below the deep adit the lode is 6 in. wide, producing stones of tin, but not enough to set a value on. In the 12 fm. level from surface, driving east of Badger's shaft, the lode is 1 ft. wide, worth 2l. per fm.

WHEAL HARRIETT.—S. Williams, Oct. 22: The lode in the 130 east end is showing a better appearance, and producing good stones of copper ore. The north part of the main lode is 2 ft. wide, producing good stones of tin in the 115 west end. The north lode in the 115 west end is producing stones of copper ore. The north lode in the 115, east and west ends from cross-course, is 1 ft. wide, producing stones of copper ore.

WHEAL HARTLEY.—P. Skewis, Oct. 26: Since our last report we have divided and cased the engine-shaft to the 20, put in penthouse, cut plat at this point, and sunk the shaft 8 ft. below it, where the lode is 3 ft. wide, composed of quartz, peach, and mundic, with stones of tin and copper ore. The 10 is driven west of engine-shaft 47 fms.; lode 3 ft. wide, composed of peach, gossan, quartz, and mundic; driving by two men and two boys, at 40s. per fm. The same level is driven east of engine-shaft 48 fms.; lode 2 ft. wide, of a very promising character, composed of gossan and peach, with good stones of black and yellow copper ore, and looks promising for further improvement; driving by two men and two boys, at 30s. per fm. The deep adit is driven east of adit shaft 11 fms.; lode 3 to 4 ft. wide, composed of gossan, quartz, and mundic; driving by two men and two boys, at 3l. per fm. The adit is driven north, on the silver lode, 28 fms.; lode 2½ ft. wide, composed of quartz and gossan, with occasional stones of lead ore; driving by two men, at 46s. per fm.

WHEAL HEARLE.—J. Phillips, W. Wesley, Oct. 24: There are no alterations in the working prices in ends or stopes since the month's setting. The 110 end is opening good paying ground. The 122 has been suspended for a short time until the tramroad and trip-plat are completed, which are now in good practical operation, and the stuff is being cleared thereby from this level, which will be driven forthwith under the 114 tin ground. The 130 is being driven west on a lode of good appearances, worth at present 5l. per fm. The skip-shaft will be re-set next Saturday to be sunk, by six men and three boys. The 122 cross-cut is still harder than the average passed through, and the 122 east more favourable for speed in the advance into the unexplored wing of the mine for some fathoms past. The steam winding-engine is at work after being repaired, and the tinstuff is being cleared from the stopes, which sample as usual for value.

WHEAL KITTY (St. Agnes).—S. Davey, Wm. Polkinghorne, Oct. 22: Holgate's Shaft: The lode in the 82, west of shaft, is becoming more settled as it gets out of the influence of the slide.—New Shaft: Pryor's lode, in the 65 fm. level, driving east of shaft, is 3½ feet wide, and worth for tin 11l. per fathom, with a good appearance. In the 65, driving west of shaft, the lode is worth for tin 22l. per fm. In the 54, driving east of shaft, the lode is worth for tin 10l. per fm. In the 54, driving west of shaft, the lode is worth for tin 12l. per fm. In the 44, driving east of shaft, the lode is worth for tin 9l. per fm., with a promising appearance. In the 44, driving west of shaft, the lode is worth for tin 12l. per fm. In the 34, driving east of shaft, the lode is worth for tin 6l. per fm. The ground in the 82 cross-cut south is still good for driving, and the men are making fair progress, as well as those clearing the 44 cross-cut south.—Wheal Vottle: We have ridded the Highburrow whim-shaft to the 12, but have not ascertained the distance driven east and west, by reason of the water being dammed back with an accumulation of stuff in the old engine-shaft, which we have commenced to clear up, and shall be carried on with the utmost dispatch.

WHEAL KITTY (Uny Lelant).—W. Williams, Oct. 27: North Russoe Lode: The lode in the rise above the 140 is worth 7l. per fathom. The lode in the winze, sinking below the 110, is worth 6l. per fathom.—Gowan Lode: The stope in back of the 70 west of Rogers's shaft, is worth 68l. per fm. The other places are without change.

WHEAL MARGERY.—R. James, W. Rogers, Oct. 27: Wellesley's continues without change. At the American shaft, sinking below the 132, the lode is worth 10l. per fm. for length of shaft (12 feet). The 132 west is passing through the cross-course, therefore we cannot report on the lode; we shall be beyond its influence by next reporting day, where from the level over we expect a lode of copper ore. In the 132 east the lode is worth 10l. per fathom. In the 122 east and west the lode is producing stones of copper ore. In the 110 east the lode is worth 4l. per fathom. In the 100 west the lode is worth 7l. per fathom. We set our tribute on Tuesday last for the next two months:—Four men, at 4s. in 1l.; four men, at 5s. 6d. in 1l.; four men, at 6s. in 1l.; eight men, at 6s. 8d. in 1l.; four men, at 7s. in 1l.; four men, at 7s. 6d. in 1l.; four men, at 8s. in 1l.; two men, at 9s. in 1l.; nine men, at 10s. in 1l.; six men, at 13s. 4d. in 1l. This is rather an improved tribute setting. We sampled on Tuesday last 429 tons (computed) of copper ore, quite equal in quality to any former sampling, and the largest quantity ever sampled in two months.

WHEAL MARY ANN.—P. Clymo, H. Hopge, J. Harris, J. Stevens, Oct. 27: Clymo's shaftmen having completed fixing the new pitwork from the 190 to the 200, will resume sinking under the 200 in the course of a day or two. The cross-cut at this level is extended 6 feet towards the lode. In the 190 north the lode is 2 ft. wide, worth 6l. per fathom; in the same level south it is 2½ feet wide, worth 11l. per fathom. In the 180 north it is 3 feet wide, worth 10l. per fathom; in the same level south it is 3½ feet wide, worth 10l. per fathom. In the 170 south it is 3 feet wide, worth 9l. per fathom; in the same level, north of Pollard's shaft, it is 2 feet wide, worth 5l. per fm. The stopes and pitches are producing much as usual.

WHEAL NORRIS.—John Andrews, Oct. 22: Carter's shaftmen are engaged fixing 8-in. drawing-lift at the 45, which will be completed by Tuesday next. The lode in the 45 fm. level end east has further improved, now 2½ ft. wide, worth 7l. per fm. There is no change in the 35 fm. level end, driving west of cross-cut, on No. 2 lode, since last report. We have cut through the lode in the 35 cross-cut south, and have commenced to drive east on its course; it is 3 ft. wide, composed principally of quartz, peach, prian, fluor-spar, and gossan, a very kindly lode indeed; it contains everything I could wish to see that is indicative of copper ore, and I should think such lode could hardly fail to produce ore in depth, if not at the present level. The lode in the stope in back of the 35 is 4½ ft. wide, worth 8l. to 10l. per fathom. The tribute pitches are looking much as usual.

WHEAL PAR.—J. Beard, Oct. 26: Rashleigh's: The 20 end east is now in 5 ft. from shaft, ground hard. The 10 east of this shaft, on No. 4 lode, is worth 3l. per fm. The 10 east of Paull's shaft, on No. 4 lode, is worth 5l. per fm.—Water's New Whim: In the 10 east of this shaft, on Jenkens's, the lode is worth 7l. per fm. The adit east of this shaft, on No. 4 lode, is worth 3l. per fm. The stopes are looking well, and bidding fair to increase our returns of tin. No other changes to report.

WHEAL PROSPER.—S. Mitchell, Oct. 27: We have cut a branch 4 in. wide in the cross-cut in the 40, containing a little tin, strongly impregnated with yellow copper ore, and letting out much water; it is not sufficiently opened upon to give full particulars to-day, but, as far as seen, I like the appearance very much. Judging from the bearing of the Trewarva's lode, and that of the branch now cut, they will form a junction a few fathoms east of the present end. I recommend now to discontinue the cross-cut for the present, and to drive east on the branch to the junction, where I anticipate good results. There is nothing new in the lode at the new shaft since my last report.

WHEAL SPARNON.—W. Tregay, E. Chegwin, Oct. 22: The engine-shaft is now down 37 fms. below the adit level, where, having reached water, we have set the men to cut ground for fixing bearers and cistern; part of the lode is in the shaft, producing good stones of yellow copper ore. The 20 west end measured 2 fms. 3 ft. driven; set again to drive by four men, at 5l. 10s. per fathom; the lode will yield 1 ton of copper ore per fathom. The 20 north cross-cut measured 4 fms. 1 ft. driven; set again to drive by six men, at 6l. per fathom. We have cut a lode here, but not got through it, producing good stones of copper ore. We are progressing with our surface work, and expect to get ready in time for the shaft, the work in which will be pressed forward as much as possible.

WHEAL TREVENNA.—T. Jennings, Oct. 27: We have opened on the tin lode running through the western deposit of tin ground; this lode has been worked on to a great extent by the ancient miners. We have cleared up some of the old workings for 9 fms. deep, and not at the bottom of them, yet we find the lode standing in different places 3 ft. wide, very rich for tin, and worth 30l. per solid fathom. We have a parcel of the lode at surface, and increasing daily. We hope to get to the bottom of the old works in a few days, where we feel confident of finding a rich lode at that point. Our western tin deposit is now mixed with a decomposed elvan, producing 5 cwts. of tin to the 100 sacks of stuff. The eastern deposit is 36 ft. thick, producing 2½ cwts. of tin to the 100 sacks of stuff. The north lode is worth 10l. per fm., the south worth 4l. per fm. We have cut two other lodes producing good work for the stamps, but not sufficiently developed as to ascertain their value. The copper lode in the shallow adit level is 3 ft. wide, and has every appearance of becoming a productive lode at a shallow depth, being composed of peach, prian, soft natured mundic, and yellow and black copper ore. I strongly recommend this lode to be developed without delay.

WHEAL UNITY CONSOLS.—W. H. Reynolds, Oct. 25: The lode at the flat-rod shaft is 18 in. wide, yielding some good copper ore. The lode in the winze is of the same value as last reported for copper; and, being now down about 8½ fms., we shall soon be in a position to open up another level. In the 60 west no lode has been taken down since last reported upon. In the cross-cut north, in the 40, we have cut a branch which is letting out water freely, and we think the old Unity lode is not far ahead. We shall sample, probably, about 18 tons of copper ore to-day.

WHEAL UNY.—S. Coade, M. Rogers, Oct. 22: There is no change in the tin lode since last week. The lode in No. 3 shaft is improved, and is now 2 ft. wide, of a promising character, producing rich stones of copper ore, but we shall know more of its value next week.

YARNER.—R. Barkell, Oct. 26: The 40 east, on the north lode, is yielding about 1½ ton per fm.—the end is very wet and spare for driving. If the water were cut down from the 30 we could commence to sink a winze at the east end of the shoot of ore seen in the 30. This I expect we shall be able to do shortly, as the water is still going lower. The 30 east, on the south lode, is without change, and the same remark will apply to the stopes both in the bottom of the 20 and 30. The new engine-shaft is progressing favourably—ground still good.

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The Pick and Gad Superseded.—It appears that in the mining operations carried on by the military of the United States in their attack upon the fortifications of the rebels, an improved mining tool was used, which possesses the advantage of doing a larger amount of work, and entirely without noise. The instrument is a modification of the "post-hole augers" of the Western prairies, and can be driven at so high a velocity that very rapid progress in the boring of a hole can be made.

Holloway's Pills — Enfeebled Existence.—This medicine embraces every attribute required in a general and domestic remedy; it overturns the foundation of disease laid by defective food and impure air. In obstruction and congestion of the liver, lungs, bowels, or any other organ, these pills are especially serviceable and eminently successful. They should be kept in readiness in every family, as they are a medicine without a fault for young persons and those of feeble constitutions; they never cause pain, or irritate the most sensitive nerves or most tender bowels. Holloway's Pills are the best known purifiers of the blood, and the best promoters of absorption and secretion, which remove all poisonous and obnoxious particles from both solids and fluids.

## ROYAL COMMISSION ON MINES—REPORT.

The Commissioners appointed by Her Majesty "to enquire into the condition of all mines in Great Britain to which the provisions of the Act 23d and 24th Vict., cap. 151, intituled 'An Act for the Regulation and Inspection of Mines,' do not apply; and to suggest the most practicable means of improving the health and safety of persons employed in such mines," having visited and inspected the principal mines to which the commission extends in Cornwall, Devonshire, Northumberland, Westmoreland, Cumberland, Durham, Lancashire, Yorkshire, Shropshire, Wales, Cheshire, and Derbyshire, and have examined many persons connected with mines competent to give information respecting them.

They have also employed experienced and trustworthy persons to examine and report upon the underground workings and superficial condition of the said mines, and to collect in bottles and tubes, made especially for the purpose, and hermetically sealed on the spot, samples of air from various mines. These samples have been subjected to careful analysis by careful chemists, who have devoted much time and attention to the subjects. In pursuance of the objects of the enquiry entrusted to them, they have also considered it their duty to avail themselves of the assistance of two medical gentlemen, who have examined a great number of working miners both at the mines and at their dwellings, not only those who were disabled by sickness of various kinds from pursuing their occupation, but also those who, though ailing, were still able to attend to their work, and those who were in comparatively good health. The reports of these gentlemen are extremely valuable and interesting, as throwing light upon the causes and nature of those diseases to which miners are peculiarly liable, and with respect to which there has been much difference of opinion. They have also obtained much valuable information on the vital statistics of miners. Bearing in mind the exclusive nature of the enquiry which they were authorised to institute, they have been careful to abstain from topics irrelevant to that enquiry; but their duty being to obtain information of every fact which directly or indirectly might be influential in producing disease, prolonging it, or accelerating its progress, they have deemed it necessary to embrace within their enquiries various subjects which at first sight might appear to be foreign to the objects of the Commission, but which on a closer examination will be found to be of the utmost importance, as substantially affecting the questions which they had to investigate. Amongst these subjects are the mode of working the mines, the wages of the miners, the character and sufficiency of their food, their social habits, the state of their cottages, the mine clubs and doctors, the early employment of children, and the workings of mines by joint-stock companies. Having completed the task entrusted to them to the best of their ability, they humbly submit to your Majesty the subjoined report, which they have arranged in separate sections, having reference to the several mining districts comprised in their enquiry, together with a summary of the general conclusions which they have drawn from the evidence before them, and the suggestions which, after careful deliberation among themselves, they have unanimously founded upon facts contained in the report.

### CORNWALL.

The rich mining districts of this county are remarkable for the great variety of mineral wealth which they contain, comprising ores of copper, tin, lead, iron, and zinc, besides bismuth, antimony, and others of less note, and, consequently, for the variety and magnitude of the mining operations there carried on. For many centuries Cornwall has been the chief source in this country from which these mineral products have been derived, and it naturally follows that continuous workings for so long a period have greatly complicated the operations necessary at the present time for extracting the ores. The great depth of some of the mines, the vast extent of the underground galleries, and the difficulties attendant upon the due ventilation of the levels, very materially affect some of the main points submitted for consideration.

Health of Miners.—The question which first claims attention is the health of miners. It may be affirmed as a general proposition that the health of the copper, tin, and lead miners, as a class, is greatly inferior to that of labourers engaged in agricultural and other open air employments, an assertion which is corroborated by the periodical returns of deaths made to the Registrar-General. At a comparatively early age the miners almost invariably exhibit in their features and persons the unmistakeable signs of debilitated constitutions. Their faces are sallow, they have an anxious expression of countenance, and their bodies are thin. At the border of middle age, or soon after, their health begins to fail, the maturity and confirmed strength of that time of life seems to be denied to them, they rapidly acquire the feebleness of declining years, and become unfit for laborious work at the time when their experience and skill would otherwise have made them valuable workmen. It is a common remark in Cornwall that "a person of 50 is old for a miner." The first symptoms of failing health among the miners are weakness in the limbs in climbing the ladders and beating the borer, shortness of breathing, giddiness, and pains in the head; their appetite fails, they are unable to take or digest an adequate amount of food, and often suffer from sickness and vomiting. These symptoms are followed by harassing cough, much expectoration, sometimes of mucus, occasionally of blood, tightness of the chest, and failure of general strength. These affections precede total disability to work, followed by premature death. The delicate condition of the miners is the more striking when contrasted with the appearance of vigorous health generally presented by the women and children in the same districts, thus showing that the causes which operate injuriously upon the health of the miners are such as do not affect their wives and families. It is much to be regretted that the medical gentlemen connected with the mines have not turned their attention to a special investigation of the causes and nature of the "miners' disease," by examining the localities and the air in which the men work, and by endeavouring to get an insight into the disease by post-mortem examinations. It is alleged that the prejudices of the surviving relatives of deceased miners against such examinations are too strong to be overcome; but there is ground for believing that these are not in all cases insurmountable. From want of sufficient investigation, hasty, and in many instances erroneous, returns of the cause of death have been made to the district registrars. From the disease peculiar to miners being commonly registered as consumption, it has been by many supposed to be identical with phthisis, or tubercular pulmonary consumption; but it is proved by the evidence of the medical witnesses that though some miners, and especially those whose families are predisposed to the affection, do die of consumption, by far the largest amount of mortality is due to other forms of lung disease of a bronchitic or asthmatic character. The Commissioners have anxiously endeavoured, by obtaining all the information in their power, to discover the true causes of the maladies which cut off a very large proportion of the mining population so long before the expiration of the period usually allotted to human existence.

By the request of the Chairman, Dr. Peacock and Mr. Bankart visited the mining districts of Cornwall and Devon, and their reports are given in an appendix. Dr. Peacock examined 83 miners who were labouring under different forms of disease, and above 500 who were still at work; and Mr. Bankart has reported on 150 ailing or disabled miners. These gentlemen agree in representing the sanitary condition of the mining population as very defective, expressing the opinion that the men are worn out by their labour at a much earlier period than is usual with persons who follow occupations equally laborious in the open air. The cases of disease which they met with were chiefly asthmatic affections resulting from bronchitis, pneumonia, and disease of the heart, and more rarely true tubercular consumption. They also state that rheumatic disorders and various dyspeptic symptoms are of common occurrence among the miners. They ascribe the unhealthy condition of the miners to several causes, among which they refer to the early age at which the miners commence working underground, to the severity of the labour which they undergo, especially in deep mines where ladders are the only means of access, to working in a heated atmosphere or in places which are draughty or wet from defective drainage, but more particularly to the impurity of the air which the men have to breathe when underground. They also state that exposure to cold and damp at the surface or in the shafts and other parts of the mines is the most frequent exciting cause of disease among the miners, operating with peculiar severity upon men in a state of perspiration, or exhausted from having worked in close places, or ascended ladders from great depths, and especially upon those already enfeebled in health and strength. The early period of life at which the miners begin to work underground very materially conduced to their premature decay. Dr. Peacock shows in his report that of the men whom he examined 39 per cent. went to work when from 10 to 13 years of age, and 48 per cent. before the age of 14. He remarks that "experience shows that when persons in early life are exposed to injurious influences they suffer from them more severely, and earlier fall under their influence, than if they had attained a more advanced age and greater constitutional vigour."

Vital Statistics.—From the evidence given before the Commissioners by Dr. Farr, F.R.S., Chief of the Statistical Department of the General Register Office, and from a return prepared for them by the Registrar-General, and printed in the appendix, they are enabled to show the rates of mortality prevailing among the miners of Cornwall at different periods of life, as compared with those prevailing among the non-mining population of the same districts, both for the five years 1849-53 inclusive, and also for the more recent triennial period 1860-62 inclusive. The districts selected for the purposes of this comparison were those of Liskeard, St. Austell, Truro, Helston, Redruth, and Penzance. The death rates were computed from the aggregate numbers of males and of deaths of males of the two classes respectively in the whole six districts taken together. The subjoined table shows the rates of mortality from all causes during the earlier period, 1849-53, among the two sections of the population, for the several successive decennial periods of life from the age of 15 up to that of 75 years:—

| Age. | Metal miners, per 1000 per annum. | Males, exclusive of miners, ditto. |
|---|---|---|
| Between 15 and 25 years | 8·90 | 7·12 |
| „ 25 and 35 „ | 8·96 | 8·84 |
| „ 35 and 45 „ | 14·30 | 9·99 |
| „ 45 and 55 „ | 33·51 | 14·76 |
| „ 55 and 65 „ | 63·17 | 24·12 |
| „ 65 and 75 „ | 111·23 | 58·61 |

From the figures in the above table it appears that the rates of mortality among the miners are not materially different from those prevailing among the non-mining males of the same districts until after the age of 35 years, from which period there is a large and progressive excess of mortality among the mining section of the male population. If we assume the rate of mortality among the non-mining males at each decennial period of life to be represented by 100, then that among the miners would be represented by 125 between the ages of 15 and 25 years, by 101 between 25 and 35, by 143 between 35 and 45, by 227 between 45 and 55, by 263 between 55 and 65, and by 189 between 65 and 75 years. That the large and progressive excess of mortality among the miners between the ages of 35 and 65 years must be due to unwholesome conditions incident to their occupation may be inferred from the fact that it does not commence until these have had full time to operate. The somewhat higher rate of mortality among miners between the ages of 15 and 25 years probably arises from the circumstance that many of the boys are put to work in the mines at too early an age. That the excessive mortality among the miners in Cornwall is not caused by the mere working underground in dark galleries, a necessary condition of the miner's occupation, and must, therefore, be mainly due to other causes, is clearly proved by some statistics relative to the coal miners of Durham and Northumberland, also given in evidence by Dr. Farr. The annexed table shows the rates of mortality among the coal miners of Durham and Northumberland during the five years 1849-53 inclusive, for each decennial period of life from the age of 15 up to that of 75 years, compared with the rates among the Cornish miners already quoted—per 1000 per annum, as before:—

| Age. | Cornish metal miners. | Northern coal miners. |
|---|---|---|
| Between 15 and 25 years | 8·90 | 8·50 |
| „ 25 and 35 „ | 8·96 | 8·49 |
| „ 35 and 45 „ | 14·30 | 10·13 |
| „ 45 and 55 „ | 33·51 | 16·81 |
| „ 55 and 65 „ | 63·17 | 24·43 |
| „ 65 and 75 „ | 111·23 | 65·16 |

Assuming, as with regard to the previous table, the rate of mortality among the coal miners at each period of life to be represented by 100, then that among the Cornish miners would be represented by 105 between the ages of 15 and 25 years, by 106 between 25 and 35, by 141 between 35 and 45, by 199 between 45 and 55, by 258 between 55 and 65, and by 171 between 65 and 75 years. The rates of mortality among the Cornish miners from the age of 35 years upwards are thus shown to have been almost as much in excess of the rates which prevail among the coal miners in the selected districts of Durham and Northumberland as they were above the rates prevailing among the non-mining male population of Cornwall. The evidence regarding the more recent period, 1860-62, shows that the great excess of mortality among the Cornish miners still continues, although the proportions are slightly different. The subjoined table shows the rates of mortality among the two sections of the male population respectively, from all causes, during the three years 1860-62, for the same periods of life as the former table:—

| Age. | Metal miners. | Males, exclu. of miners. |
|---|---|---|
| Between 15 and 25 years | 9·44 | 7·50 |
| „ 25 and 35 „ | 9·57 | 8·32 |
| „ 35 and 45 „ | 15·12 | 10·08 |
| „ 45 and 55 „ | 29·74 | 12·50 |
| „ 55 and 65 „ | 63·21 | 19·96 |
| „ 65 and 75 „ | 110·51 | 53·31 |

Again, assuming the rate of mortality at each period of life among the non-mining males to be represented by 100, then the rate among the miners would be represented by 126 between the ages of 15 and 25, by 115 between 25 and 35, by 150 between 35 and 45, by 238 between 45 and 55, by 317 between 55 and 65, and by 207 between 65 and 75 years. From Dr. Farr's evidence, supplemented by the Registrar-General's return, it further appears that the excessive rate of mortality among the Cornish miners is mainly caused by the large number of deaths from pulmonary consumption and other diseases of the lungs. As, however, deaths which are registered in some districts as arising from consumption are registered in other districts under different names, such as asthma and bronchitis, it is best for statistical purposes to throw all the diseases of the lungs into one class, under the general name of pulmonary diseases; an arrangement which enables the rates of mortality from diseases of the lungs in different districts to be more accurately compared with each other than if the several diseases of these organs were nominally kept separate. The class of pulmonary diseases thus formed, comprises phthisis, laryngitis, bronchitis, pleurisy, pneumonia, asthma, and all cases returned as "diseases of the lungs." The annexed table shows the average annual rate of mortality per 1000 persons from pulmonary diseases among miners, and also among males exclusive of miners, during the three years 1860-62 inclusive, for each decennial period of life between the ages of 15 and 75 years:—

| Age. | Metal miners. | Males, exclu. of miners. |
|---|---|---|
| Between 15 and 25 years | 3·77 | 3·30 |
| „ 25 and 35 „ | 4·15 | 3·83 |
| „ 35 and 45 „ | 7·89 | 4·24 |
| „ 45 and 55 „ | 19·75 | 4·34 |
| „ 55 and 65 „ | 43·29 | 5·19 |
| „ 65 and 75 „ | 45·04 | 10·48 |

Assuming, as before, that the rate of mortality among the males exclusive of miners is represented at each period of life by 100, then that among the miners would be represented by 114 between the ages of 15 and 25 years, by 108 between 25 and 35, by 186 between 35 and 45, by 455 between 45 and 55, by 834 between 55 and 65, and by 430 between 65 and 75 years. It is, therefore, evident that pulmonary diseases are the chief cause of the excess of mortality among the Cornish miners; and that these diseases are due to the conditions incident to the miner's labour may also be confidently inferred, as in the case of the death-rates from all causes, from the fact that the excess of mortality arising from them does not reach its acme until after the middle of life, when these conditions have had full time to produce their effect on the health of the miners. A much greater discrepancy will be observed between the rates of mortality from pulmonary disease among the miners and non-miners than has been shown to exist between the rates of mortality from all causes among the two sections of the population respectively. This is undoubtedly due to the fact that exposure to the peculiar evils incident to their occupation causes many miners to die of pulmonary diseases, who in different circumstances would have died of other complaints. The subjoined table contrasts the rates of mortality among miners at the two periods 1849-53 and 1860-62, both from all causes and from pulmonary diseases:—

| | All causes. | | Pulmonary diseases. | |
|---|---|---|---|---|
| | 1849-53. | 1860-62. | 1849-53. | 1860-62. |
| Between 15 and 25 years | 8·90 | 9·44 | 3·05 | 3·77 |
| „ 25 and 35 „ | 8·96 | 9·57 | 4·42 | 4·15 |
| „ 35 and 45 „ | 14·30 | 15·12 | 8·47 | 7·89 |
| „ 45 and 55 „ | 33·51 | 29·74 | 24·31 | 19·75 |
| „ 55 and 65 „ | 63·17 | 63·21 | 44·46 | 43·29 |
| „ 65 and 75 „ | 111·23 | 110·51 | 55·87 | 45·04 |

It will be seen in the above table that the only material difference in favour of the more recent period is that existing between the ages of 45 and 55 years. A comparison of the rates of mortality from all causes among the non-mining section of the male population also shows a similar improvement in favour of the more recent period.

[*To be continued in next week's Journal.*]

## MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

Gold in Wales.—Castell Carn Dochan returned for the week ending Oct. 25. 2 ozs. 7 dwts. Gold, from 20 cwts. quartz.

Wheal Esther.—The discovery made a short time since in the western part of the sett is daily improving. There is little doubt but this discovery is a permanent one, and that the mine will soon prove a very rich one, with judicious economy in developing the same.

West Clitters.—A company has been formed, in 6000 shares, for the working of this large and promising sett, which is north-west of Hingston Down, parallel and adjoining to New Wheal Martha, and on the run of the Clitters lodes. Operations have been commenced, and some very promising lodes laid open, and an adit is being driven on one of them, which will give high backs. There is abundance of water-power, and every indication of its becoming a great mine.

North Chiverton continues to open up well. Another parcel of blende will, together with a parcel of lead, be soon ready for the market. With such good prospects it is not to be wondered at that the shares are in demand, although they are selling at less than half their real value.

North Devon Silver-Lead (Combmartin) is doing well. The bi-monthly sales of ore have now increased to 50 tons for November 1, and the succeeding sale is expected to be 60 tons at least. The great caunter lode, properly so called, has been sunk on to the present time only 4 fathoms below the 10, where it was first discovered, and is worth 120*l.* per fathom for the whole depth; it is now being opened on in three other places—by a rise above the 10, and by a rise and a sink in the adit, all of which points are laying open excellent ore ground. The same lode will be cut by a cross-cut in the 20 in about a fortnight.

East Wheal Vor is now attracting much attention, and the indications of its becoming a great mine are very apparent.

Rhafna.—In company with Capt. Rawson (who now succeeds Capt. Wasley in the management) I made a careful inspection of this mine on the 22d and 23d of last month. Although the works have not progressed so satisfactorily as I could have wished, the recent explorings have afforded much valuable information as to the constitution of the lodes, and gave me additional confidence in the value of the property. The ground through which level C has been driven has not been very productive, and the ore has been mixed with a large proportion of blende, which has considerably impeded and rendered expensive the operation of preparing it for market. The lode at the end of this level has recently undergone a complete change, and is now coming under the old workings in the upper levels, where large quantities of ore were worked in former years. This portion of the district is quite of a different nature to that which level C has recently passed through, and presents indications of a most favourable character, this level being almost free from the presence of blende, and the lode favourable for working. It is most important to drive forward level C into this portion of the grounds as fast as possible, and in all probability a very few fathoms driving from the present end will accomplish it. I may observe that Mr. John Hitchins and Capt. Rawson quite concur with me in this view, and recommend that the works be pushed forward.

At the Sovereign Gold Company's Mine they have discovered a fine lode of copper, easy to be worked, and the value of which, according to several assays, varies from 32 to 35 per cent. pure copper. This is a valuable discovery.

Combmartin.—You will be pleased to see that another mine in this very rich district is to be opened, being the New Combmartin Silver-Lead, on the West Challacombe Estate. Having lately inspected the mine and the surrounding country, I have been gratified at finding a full confirmation of the reports that have been published, as I could easily ascertain the existence of all the lodes and cross-courses shown on the plan, from many of which I took samples of ore. Judging from the appearance of all these lodes in the cliff, which is 50 to 60 fathoms high, it is surprising that this mine has not been fully worked, it being known that one of the lodes is one which produced so much valuable silver-lead in the old Combmartin Mine, distance about ¼ mile south, and that another is supposed to be identical with the lode which is yielding such riches in the North Devon Mine, about a mile south-east. This lode has been proved, and a splendid gossan with ore found about 6 fms. deep, in the lane near West Challacombe, where another east and west lode crosses it. The adit at this point will be 37 fms. below surface, and it will be upwards of 30 fms. below the workings of the old men, which have evidently here been very extensive, and which are supposed to be referred to as the North Combe. The flookan of this lode, which is about 4 ft. wide, contains a great quantity of mundic, with lead ore. The cost of driving will be very small, and, as the rubbish will be taken to the sea, all expense of surface rents will be avoided until dressing-floors are required, which can be laid out on the south side of the estate, near a never-failing stream of water. It is proposed to drive adits upon these lodes from the sea, and it is not doubted but that great deposits of silver-lead ore will be found at the junctions with the numerous lodes and caunters which cross at a variety of angles. These adits will have from 30 to 60 fms. of backs. They will be, respectively, about 80 and 60 fms. in length from the sea to the valley on the south, where the ore can be raised to surface very near to the site of the proposed dressing-floors. As the ground is very easy for driving, a few months will suffice to show the value of the mine, and will enable the company to decide on the future enlargement of operations. It would be difficult to find a property where so much can apparently be shown at so small a cost; and, considering the great advantages of the harbour in obtaining timber, &c., and delivering the ore, it will be found that the mine is well worthy of the trial which is now being commenced.

Mine Accident.—At West Chiverton Mine, John Truscott, 27, was killed whilst blasting a piece of the rock detached by the charge striking him on the back of the head, and causing instantaneous death. It appeared that the deceased was in the habit of waiting to see the fuse spit before retiring. Verdict, "Accidental death."

Thames Tunnel Company.—Receipts for the week ending October 22, 67*l.* 13*s.* 5*d.*; number of passengers, 16,241.

## The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—London, Oct. 28, 1864.

| COPPER. | £ s. d. | £ s. d |
|---|---|---|
| Best selected....p. ton | 88 0 0 | 89 0 0 |
| Tough cake..... „ | 85 0 0 | 86 0 0 |
| Tile ..... „ | 85 0 0 | 86 0 0 |
| Burra Burra .... „ | 91 0 0 | 92 0 0 |
| Copper wire .....p. lb. | 0 1 1 | — — |
| ditto tubes ..... „ | 0 1 1½ | — — |
| Sheathing & bolts p. ton | 96 0 0 | 97 0 0 |
| Bottoms ..... „ | 112 0 0 | — — |
| Old (Exchange).... „ | 91 0 0 | — — |

| IRON. | Per Ton. | |
|---|---|---|
| Bars Welsh, in London.. | 7 17 6 | — — |
| Ditto, to arrive ..... | 7 15 0 | 7 17 6 |
| Nail rods ..... | 8 15 0 | — — |
| „ Stafford. in London | 9 10 0 | — — |
| Bars ditto | 9 10 0 | — — |
| Hoops ditto | 10 0 0 | 11 0 0 |
| Sheets, single ..... | 11 0 0 | 11 10 0 |
| Pig No. 1, in Wales..... | 4 10 0 | — — |
| Refined metal, ditto.... | 4 0 0 | 5 0 0 |
| Bars, common, ditto.... | 7 0 0 | — — |
| Do., merch., Tyne or Tees | 8 5 0 | 8 10 0 |
| Ditto, railway, in Wales | 7 0 0 | 7 10 0 |
| Ditto Swed. in London. | 11 5 0 | 11 10 0 |
| To arrive ..... | 11 10 0 | — — |
| Pig, No. 1, in Clyde.... | 2 11 6 | 2 17 6 |
| Ditto, f.o.b. Tyne or Tees | 2 16 0 | 2 18 0 |
| Ditto, forge, f.o.b. ditto.. | 2 15 0 | — — |
| Railway chairs..... | 5 10 0 | 5 15 0 |
| „ spikes..... | 11 0 0 | 12 0 0 |

| LEAD. | | |
|---|---|---|
| English Pig, ordny. soft | 20 0 0 | 20 5 0 |
| Ditto (WB) ..... | 22 2 6 | — — |
| Ditto sheet ..... | 21 15 0 | — — |
| Ditto red lead ..... | 22 0 0 | — — |
| Ditto white ..... | 26 0 0 | 26 5 0 |
| Ditto patent shot..... | 23 0 0 | — — |
| Spanish ..... | 19 10 0 | — — |

| BRASS. | Per lb. |
|---|---|
| Sheets ..... | 9¼d.-10d. |
| Wire ..... | 9¼d.- 9¼d. |
| Tubes ..... | 8d.-10d. |

| FOREIGN STEEL. | Per Ton. |
|---|---|
| Swedish, in kegs (rolled) | 15 10 0-15 15 0 |
| „ (hammered). | 16 0 0-18 0 0 |
| Ditto in faggots..... | 17 0 0-18 0 0 |
| English, Spring ..... | 19 0 0-23 0 0 |
| Bessemer's, Engineers Tool | 44 0 0- — |
| „ Spindle .... | 30 0 0- — |
| Quicksilver (per bottle). | 8 0 0 bott. |

| SPELTER. | Per Ton. |
|---|---|
| Foreign ..... | 21 0 0- — |
| To arrive ..... | 22 5 0- — |

| ZINC. | |
|---|---|
| In sheets ..... | 28 0 0- — |

| TIN. | |
|---|---|
| English, blocks .....101 | 0 0- — |
| Ditto, Bars (in barrels)..102 | 0 0- — |
| Ditto, Refined .....106 | 0 0- — |
| Banca ..... | 95 0 0- — |
| Straits ..... | 94 0 0- — |

| TIN-PLATES.* | |
|---|---|
| IC Charcoal, 1st qua. p. bx. | 1 8 0- 1 11 |
| IX Ditto 1st quality „ | 1 14 0- 1 17 0 |
| IC Ditto 2d quality „ | 1 6 0- 1 8 0 |
| IX Ditto 2d quality „ | 1 12 0- 1 14 0 |
| IC Coke ..... „ | 1 3 0- 1 5 0 |
| IX Ditto..... „ | 1 9 0- 1 11 0 |
| Canada plates ....p. ton | 13 10 0- — |

In London; 20s. less at the works.

| | |
|---|---|
| Yellow Metal Sheathing.p. lb. | 8½d.- — |
| Sheets .....p. lb. | 8¼d.- |
| Indian Charcoal Pigs in London ..... | 7 0 0- 7 10 0 |

* At the works, 1s. to 1s. 6d. per box less.

Remarks.—There appears to be a slightly improved tone in the Money Market lately, which, should it continue without receiving any check, will enable us to look forward with some hope to a better state of things arising before long. However, while monetary affairs remain in so much doubt, and the present uncertainty and distrust continue in mercantile affairs, we cannot expect any very great improvement; and we must not imagine that it will be otherwise than very gradual in its development; still, when the turn in commercial matters does arise, we may reasonably hope that it will gradually go on from one step of improvement to another, until it has quite recovered its former position. This, however, will be a work of time, and will require considerable caution on the part of all interested in commerce, while they render every aid in their power to bring about so desirable a result. In the mean time the Metal Market remains exceedingly quiet, very little real business being done; buyers preferring to wait for the present, to see whether a more favourable state of things may not arise before giving out their orders; and many, also, seeming to expect that metals will still go lower in price, as they have orders at limits which have not yet been reached.

Copper.—Transactions in this metal continue very limited, and purchases of manufactured are still made at 3*l.* or 4*l.* under the prices quoted by the smelters; while unwrought can still be obtained at 85*l.* to 86*l.*, no improvement seems probable at present.

Iron.—In Staffordshire, the orders for manufactured iron are smaller; the general anxiety and distrust causing a pause, while the stoppage of mills in Lancashire, which is a great consumer of South Staffordshire iron, is exercising an adverse influence; at present, orders for sheets and plates are on hand sufficient to keep the mills at work for a few weeks. The foreign demand is dull, and the colonial orders very moderate; while the panic in Brazil, to which a considerable trade was doing, seriously influences prospects. The strike, although pretty well over in some districts, still continues in full vigour in others. In Welsh, the iron trade is in a fairly satisfactory state, and although the depression which prevails in financial circles has considerably checked the demand for exportation, yet the makers are still pretty well off for orders. As to the American trade, that has been reduced to the lowest point, and the prospects of a revival are exceedingly remote. Houses whose brands are in repute are doing a large home trade; and there is a moderate continental enquiry. Shipments of railway iron continue to South American ports. Last week's quotations are firmly maintained. Swedish iron is without improvement, and prices have become rather lower. In Scotch pig-iron the fluctuations have not been very great during the week, and, upon the whole, the market has been rather better than at the close of last week; prices have varied between 50s. 6d. and 50s. 9d. cash, and 51s. 1½d. and 51s. 3d. one month. The last advices from Glasgow state the market to be languid, a limited business having been done at 50s. 6d. to 50s. 3d. cash; closing quietly rather sellers at the lower quotation.

Lead.—The market continues quiet, with a very limited demand. Prices may now be quoted at 20*l.* for common English pig, 20*l.* 5*s.* for LB, and 22*l.* 2*s.* 6*d.* for WB.

Tin remains in an unsatisfactory condition. English is obtainable under the official quotations. Straits have fallen to 94*l.* cash, and Banca to 96*l.*; but at these prices the market has shown a somewhat firmer aspect.

Spelter.—In the absence of actual transactions prices are almost nominal; they may, however, be quoted at 21*l.* on the spot, and 21*l.* 5*s.* for forward delivery. Steel still inactive.

Tin-Plates.—Coke-plates command a fair sale, and there a good many orders in the market; charcoal, however, are dull of sale, and many of the makers are stocking for want of orders.

Quicksilver is still obtainable at the quotation.

Glasgow, Oct. 27.—The market was firm in the forenoon, at 50s. 6d. cash, and closed, buyers, at 50s. 1½d.; sellers, 50s. 3d., prompt. No. 1, g.m.b., 51s. 6d.; No. 3, 50s. 3d.

Middlesbro', Oct. 27.—Our market has been steadier during the past week; although the price has slightly further declined. To-day we closed with buyers of warrants at 47s. cash, sellers 6d. per ton more. There is very good enquiry for shipping iron at fair prices—No. 1, 50s.; No. 3, 47s.; No. 4, 46s. Mottled and white, 45s.

Birmingham, Oct. 28.—Rylands' "Iron Trade Circular" reports the strike breaking down under enforcement of the law against meetings to intimidate colliers going in by parties, but still subject to exciting influences. Trade recovering, but unsettled. Pigs inanimate; bars, plates, angles, and rods enquired for. Home orders limited in quantity; exports declining. Prices—Pigs, common forge, 3*l.* to 3*l.* 5*s.*; melting, 3*l.* 2*s.* 6*d.* to 3*l.* 7*s.* 6*d.*; mine forge, 3*l.* 7*s.* 6*d.* to 3*l.* 15*s.*; better class, 4*l.*; hydrates, 4*l.* 7*s.* 6*d.* to 4*l.* 15*s.*; hematites, 3*l.* 10*s.* to 4*l.* 5*s.*, according to quality; North Staffordshire, best make, 3*l.* 5*s.*; Cleveland district, 3*l.* 4*s.* to 3*l.* 12*s.* 6*d.*, long weight, delivered; Shropshire cold-blast, 4*l.* 10*s.* to 5*l.*, delivered into the district; Gartsherrie, 53*s.* 6*d.* to 58*s.*; Eglington, 52*s.* 6*d.* to 54*s.*, delivered on the railway at the works; we also quote spiegeleisen at 6*l.* 15*s.*; puddled steel, 12*l.* 10*s.* per ton; cast-steel, blocks (raw), 1*l.* 6*s.* per cwt.; cast hammered, 1*l.* 14*s.* per cwt., f.o.b. at Hull.—Manufactured Iron: Marked bars, 8*l.* 10*s.*; hoops, 9*l.* 10*s.*; singles, 10*l.*; doubles, 11*l.* 10*s.*; lattens, 13*l.*; angles, 8*l.* 10*s.* to 8*l.* 15*s.*; gas strips, 8*l.* 10*s.* to 8*l.* 15*s.*; nail sheets 9*l.* to 9*l.* 10*s.*; Welsh bars, 7*l.* to 7*l.* 15*s.*, at the works.

Coal Market.—On Monday, the stormy weather having stopped the progress of the ships, only twelve came forward. The small quantity of coal on hand was readily taken at fully last week's prices. Best house coals, 20s. 9d. to 21s. 6d. per ton; seconds, 19s. 6d. to 20s. 3d.; Hartley's, 18s. 6d. to 19s. 3d.; and manufacturers', 15s. to 17s. 6d. per ton.—On Wednesday, eight arrivals. The few coals for sale were all cleared off at last day's prices.—On Friday, 28 arrivals. The continued short supplies, and the stormy weather in the North preventing the laden vessels putting to sea, caused an animated demand for coals to-day, and the market was entirely cleared, at an advance of from 3d. to 6d. per ton. Hetton Wallsend, 21s. 9d.; East Hartlepool Wallsend, 21s. 6d.; Braddyll's Wallsend, 20s. 6d.; Heugh Hall Wallsend, 20s. 6d.; Kelloe Wallsend, 20s. 6d.; and Bell's Wallsend, 20s. per ton. Unsold, *nil;* 10 ships at sea.

Consumption of Coal in France.—It is estimated that the consumption of coal in France was only 500,000 tons in 1789; 4,290,000 in 1840; 13,600,000 in 1860; and 15,200,000 tons in 1863. About two-thirds of this last quantity were produced from the country itself. France, however, cannot take high rank as a coal-producing country. An equal quantity is extracted even from Belgium, a large quantity from the Zoll-

vania, and Great Britain, which produced only 13,000,000 tons in 1800, furnished in 1863 above 86,000,000 tons.

Exports of Coal.—By the Monthly Circular of Messrs. Laird, Liverpool, we learn that the quantity of coal exported during Sept. was 790,547 tons, against 708,384 tons in the corresponding month of 1863, showing an increase of 82,163 tons. The particulars are—From the Northern ports, 430,866 tons; Yorkshire, 35,083 tons; Liverpool, 61,805 tons; Severn ports, 215,894 tons; and Scotch, 46,899 tons. The increase was—Northern ports, 71,384 tons; Yorkshire ports, 6744 tons; Liverpool, 3755 tons; Severn ports, 6861 tons. The decrease was—Scotch ports, 6581 tons. Total exports from January to Sept. inclusive, 6,053,950 tons; same period last year, 5,644,089 tons—increase this year, 409,861 tons.

Coal in New Zealand.—A stratum of excellent coal, 3 ft. thick, is reported to have been discovered in Marlborough province.

In the Mining Share Market, in one or two mines a moderate amount of business has been transacted this week, but, on the whole, very little improvement is visible in its general tone. Metals continue dull, and this, with the absence of any marked improvements or discoveries in mines, tends to the general depression. There is some idea, however, that money will become easier before long, and other improvements may follow. East Caradon shares have been very flat, and declined to 22, 23; the caunter is poor in all the levels; the new lode is worth 33*l.* per fm., taking the four ends together; the south lode, in the 60 east, is worth 6*l.* per fathom; this lode was very rich in the 70 west, but has been stopped, owing to its being driven to the boundary of South Caradon. In about a week or ten days the cross-cut in the 80 is expected to reach this same lode, and this is one of the important points of the mine, and upon which a rise or fall of 5*l.* per share may depend. The chances are certainly in favour of a good lode, if we may judge from the richness of the level above; and, in taking a fair and dispassionate view of East Caradon—although we must all admit that at the present moment the mine is poor—we must not lose sight of the fact that South Caradon has lately risen to 540*l.* per share, owing to the great richness of its lodes in the eastern part of the sett, adjoining East Caradon; and that these lodes of South Caradon will be intersected ere long in East Caradon by cross-cuts from Seccombe's shaft, which is nearly down 55 fathoms deep. East Wheal Grenville shares receded to 7, 7⅛, sellers, on Monday, and seemed very flat; they recovered again on Tuesday, and leave off 7⅜ to 7½. Hingston Down, 4 to 4¼; at the meeting, on Tuesday, the accounts showed a balance in favour of the company of 1228*l.* 11s. 8d.; and the cost for Sept. and Oct. estimated at 1800*l.*; and the sampling of 470 tons, which it is calculated will about meet the expenditure. On the whole, the mine is looking well; and when more ground shall have been opened both in length and depth, on the ore lately discovered in the 110 fathom level, the samplings will increase, and the mine be brought into a profitable position. Wheal Grenville, 5¾ to 6; the tin sale this month is 807*l.* 10s. 8d., which is considerably less than expected, and it sold under 60*l.* per ton. The fall in tin since the stamps were ordered has been 14*l.* per ton, and even since the end of August the price realised is less by 6*l.* per ton. The different points of operation in the mine, according to the agent's last report, are valued at 239*l.* per fathom, while good improvements are looked for in the 110 and the 120 fm. level ends. Carn Camborne, 32s. to 34s. South Condurrow shares have advanced to 35s., 40s.; at the meeting, held on Monday, a call of 5s. per share was made. The accounts showed a balance of 918*l.* 7s. 3d. against the company. North Chiverton, 2 to 2½; this mine, we understand, is likely to prove one of the best speculations in the district. Clifford Amalgamated, 30 to 31; Cook's Kitchen, 11½ to 12½; East Basset, 52½ to 57½; East Carn Brea, 6½ to 7; East Lovell shares are not so firm. East Russell, 4¼ to 4½; the lode is daily expected to be cut in the 130, but the delay causes disappointment. Great Laxey, 16 to 17; Great Wheal Vor shares have been in great demand, and advanced to 35, 36; Hallenbeagle, 3¼ to 3½; Nangiles, 23 to 25; North Downs, 17s. 6d. to 22s. 6d.; North Roskear shares are firmer, at 18 to 19; North Treskerby, 2¾ to 2¾; Providence Mines, 34 to 36; Stray Park, 18 to 20; Tincroft, 15½ to 16½; West Caradon, 6½ to 7, and shares in request; West Chiverton, 55 to 60; West Seton, 210 to 220; West Tolgus, 60 to 65; Wheal Chiverton, 5¼ to 6. Wheal Crebor shares have been flatter, owing to a falling off in the 96 west, though by the agent it is only considered temporary. Wheal Mary Ann, 15½ to 16½; Wheal Seton, 190 to 200; Wheal Trelawny, 19 to 20; Alten, 2 to 2¼.

On the Stock Exchange a moderate amount of business has been transacted in Mining Shares during the week. The following quotations were officially recorded in British Mining Shares:—East Grenville, 7, 7⅛; Grenville, 6; Devon Great Consols, 590; East Basset, 60; Great Laxey, 15⅞, 16⅛; Great Wheal Vor, 32½, 33½, 34, 33⅞, 34½, 34, 35, 35⅛; Tincroft, 15; East Caradon, 24, 22½, 22⅞. In Colonial Mining Shares the prices were:—Yudanamutana, 2, 1¾, 2, 1¾, 2; Cape, 8⅛; Port Phillip, ⅛, 1; General, 23⅛; Worthing, ⅛, ⅛. In Foreign Mining Shares the prices were:—Anglo-Brazilian, ⅛; East del Rey, ⅛; Montes Aureos, 1½; St. John del Rey, 31, 32, 30½, 31½, 30½, 32, 30¾, 31½.

Irish Mine Share Market.—The great feature in the transactions in mining shares since our notice of last week is the advance of the Mining Company of Ireland from 28*l.* cash to 28*l.* 10s. prompt, and 30*l.* for January account, being equal to about 335 per cent. prem. on 7*l.* paid per share. Also a great fluctuation in Wicklow Copper shares, which at one time were done at 12*l.* 5s. (2*l.* 10s. paid), and quickly rose to 13*l.*, with a strong tendency to a further rise. The nett profits of this company's workings during the last half-year, realised from *bona fide* sales of copper and sulphur, considerably exceed those of several years past, and most substantially prove that although the total profits from this mine from the commencement are estimated at upwards of 250,000*l.*, they are still greatly improving in productiveness as they are getting deeper. This fact speaks volumes in favour of Irish mines in general, and more particularly of those of the county of Wicklow. The shares of the General Mining Company for Ireland were in better demand, at an advance of 5s. per share, and Connorree shares are quoted at 19s. to 20s. Killaloe Slate are on offer, as well as Carysfort shares.

At Redruth Ticketing, on Thursday, 3336 tons of ore were sold, realising 15,860*l.* 11s. 6d. The particulars of the sale were:—Average standard, 122*l.* 8s.; average produce, 6½; average price per ton, 4*l.* 15s.; quantity of fine copper, 204 tons 15 cwts. The following are the particulars:—

| Date. | Tons. | Standard. | Produce. | Price per ton. | Per unit. | Ore copper. |
|---|---|---|---|---|---|---|
| Sept. 29 | 3683 | £123 19 0 | 6½ | £4 18 0 | 15s10½d | £79 9 0 |
| Oct. 6 | 3289 | 122 11 0 | 6½ | 5 2 6 | 15 11½ | 79 17 6 |
| „ 13 | 2403 | 119 7 0 | 6⅞ | 5 10 6 | 15 11 | 79 6 0 |
| „ 20 | 4659 | 128 0 0 | 5⅝ | 4 8 6 | 15 9½ | 79 0 0 |
| „ 27 | 3336 | 122 8 0 | 6½ | 4 15 0 | 15 6 | 77 10 0 |

Compared with last week's sale, the decline has been in the standard 1*l.* 15s., and in the price per ton of ore about 2s. Compared with the corresponding sale of last month, the decline has been in the standard 2*l.*, and in the price per ton of ore about 2s. 6d.

The following dividends have been declared during the month of Oct.:—

| Mines. | Per share. | Amount. |
|---|---|---|
| East Caradon | £0 17 0 | £5222 8 0 |
| Dolcoath | 6 0 0 | 2148 0 0 |
| Mass-y-Safn | 1 0 0 | 2000 0 0 |
| Herodsfoot | 1 15 0 | 1792 0 0 |
| West Wheal Seton | 4 0 0 | 1600 0 0 |
| Wheal Seton | 4 0 0 | 1584 0 0 |
| Clifford | 0 10 0 | 1450 0 0 |
| Lisburne | 3 0 0 | 1200 0 0 |
| Wheal Basset | 1 10 0 | 768 0 0 |
| Marke Valley | 0 1 6 | 675 0 0 |
| Cwm Erfin | 0 15 0 | 650 5 0 |
| East Darren | 2 0 0 | 600 0 0 |
| Bedford United | 0 2 6 | 500 0 0 |
| New Birch Tor and Vitifer | 0 1 6 | 450 0 0 |
| Total | | £20,639 13 0 |

At the New Birch Tor and Vitifer Consols Mine meeting, on Tuesday (Mr. J. Bayly in the chair), the accounts showed a credit balance of 835*l.* A dividend of 450*l.* (1s. 6d. per share) was declared, and a balance of 385*l.* was carried forward to the credit of the next account. Details appear in another column.

At Kelly Bray Mine meeting, on Thursday (Mr. J. Field in the chair), the accounts for the four months ending with the cost for August showed a debit balance of 137*l.* 3s. 9d. The report of Capt. Rowe stated that in 14 days there had been raised 38 tons of ore, which realised 5*l.* 7s. 6d. per ton, and there were now at surface 50 tons of good ore towards the next sampling. The bunch of ore had already been developed 8 fms. in length and 4 fms. in depth, the average value being 20*l.* to 60*l.* per fathom, and the lode in depth was improving in value. They had commenced sinking the whim-shaft from surface, which would come down about 9 fms. in advance of the 25 end, and with good speed they anticipate this shaft would be through to the bunch of ore within three months from the present time. The machinery on the mine was ample to work this new discovery. The working was independent of the western mine, and there was no fear of the water from the neighbouring mine. He considered this the best discovery that had taken place in the Callington district for years. Messrs. J. Field, A. Richards, and B. Alexander were appointed the committee of management.

At Hingston Down Consols Mines meeting, on Tuesday, the account of expenditure and receipts showed a cash balance in hand of 228*l.* 11s. 8d.; and an estimated account of payments and receipts before the meeting to be held in December next showed an estimated credit balance of (including 100*l.* on deposit, at 7 per cent.) 1349*l.* 8s. 6d. Captain T. Richards reported that "the mine is looking well, and when more ground shall have been opened both in length and depth on the ore lately discovered in the 110 fm. level, the samplings will increase, and the undertaking brought into a good profitable position."

At the Fowey Consols Mine meeting, on Oct. 18, the accounts for four months ending August showed a loss of 524*l.* 15s. 4d.; and the balance of 794*l.* 18s. 6d. was carried to the credit of the next account. From the present poverty of the mine, coupled with the fact that for the last four years, notwithstanding the credits for ores, &c., have amounted to 117,246*l.* 2s. 6d. (upon which dues amounting to 4571*l.* 0s. 6d. have been paid to the lords of the soil), it has been worked at a loss to the adventurers of 39336*l.* 4s. 9d.; therefore, before sanctioning the additional outlay (about 10s. per share) as contemplated in the agents' report, the purser was instructed to make application to the several lords and ladies of the soil for such a reduction of the dues as from the present and probable future condition of the mine may appear to be equitable.

At the Gawton Copper Mine meeting, yesterday (Mr. J. Rowlands in the chair), the accounts for the four months ending with the costs for August showed a debit balance of 267*l.* A call of 2s. per share was made. The report of Capt. Rowe stated that by the end of the present week the shaft would be down to the 50 in a beautiful channel of ground. They could then commence cross-cutting towards the lode, which would not be reached within four or five months. If cut in the same channel of ground as they had at present, it would, no doubt, prove productive. He did not recommend resuming operations on the ore ground discovered in the western mine until they had intersected the lode in the cross-cut. The ground would then come away at a considerable profit to the adventurers.

At the South Wheal Crofty meeting, on Oct. 17, the accounts for July and August showed a debit balance of 527*l.* 10s. 7d. A call of 7s. 6d. per share was made. The question of the erection of steam-stamps was postponed. The agents' report stated that the mine continued to improve, and they thought it not improbable that the improvements at James's shaft, at the bottom, might lead to a successful issue.

At the East Wheal Ellen meeting, on Monday, the accounts showed a debit balance of 209*l.* 5s. 9d. A call of 3s. per share was made. Capts. Pryor, Garland, and Corfield, in their report, say—"We fully believe if there were a small engine erected, and the mine sunk 30 or 40 fms. below the present bottom, which can be done for a small outlay, it would result in opening up a valuable and lasting mine."

At Wheal Hope meeting, yesterday, the accounts showed a debit cash balance of 504*l.* 6s. 3d., and liabilities in excess 768*l.* 10s. 7d. A call of 7s. 6d. per share was made. The report was considered very satisfactory.

At the Crane Mine meeting, on Oct. 20, the accounts for four months ending August showed a debit balance of 1189*l.* 7s. 4d. A call of 1*l.* 7s. per share was made. The arrears of calls amount to 525*l.* 8s. 1d. Capts. Skewis and Rule say—"We have sold since the last meeting 55 tons 1 cwt. 2 qrs. of copper ore, for 492*l.* 19s. 9d. We think the prospects of this mine are more cheering than for some time past."

At the New Wheal Seton meeting, on Tuesday, the accounts for three months ending August showed a debit balance of 895*l.* 8s. 8d. A call of 3*l.* per share was made. It was resolved that Capt. Charles Thomas should inspect the mine, and a copy of his report be sent to each adventurer.

At the Lady Bertha Mine meeting, on Thursday (Mr. Upton in the chair), the accounts, estimating the costs and returns for the current three months, showed a debit balance of 543*l.* A call of 2s. per share was made. Details appear in another column.

At the Baldwin (Isle of Man) Mining Company meeting, on Tuesday (Mr. John Windsor in the chair), the accounts for the six months were audited and passed. The directors' report states that the plant and machinery are now all completed, answer their most sanguine expectations, and for utility of purpose not to be surpassed by any new mine on the island. Capt. E. Bawden recommends the sinking of the engine-shaft with all possible speed, as no great results can be expected at the present depth, although but few young mines have shown better symptoms so near the surface. The calls on the new shares are payable 5s. per share per month regularly, and the tenth call has been paid.

At North Wheal Basset meeting, on Wednesday, the accounts showed a debit balance of 428*l.* 16s. 1d. The arrears of calls amount to 346*l.* 5s. A call of 2s. 6d. per share was made; and Capt. Wm. Roberts was appointed chief agent at the mine, in the room of Capt. G. Davey, who has resigned.

At New Trevenen meeting, on Oct. 17, the accounts showed a debit balance of 503*l.* The loss on the two months' working was 813*l.* A call of 10s. per share was made.

At Wheal Edward meeting, yesterday (Mr. J. Rowlands in the chair), the accounts for the four months ending with the costs for September showed a debit balance of 495*l.* 17s. 1d. A call of 4s. per share was made. The report of the agent (Capt. Rowe) stated that the lode had improved in the bottom of the 81, being now worth from 8*l.* to 16*l.* per fathom. There were two or three points of considerable interest, which, when developed, would no doubt lead to favourable results. The future costs would be diminished, and the prospects were encouraging. The committee of management was re-elected.

At the Vale of Towy Mine general meeting the accounts showed a debit balance of 855*l.* 4s. 5d. A call of 1s. per share was made. The agents' report was considered of the most satisfactory character. They have 93 persons employed on the mine, exclusive of carriers of coal, ore, wood, &c.

At East Lovell a call is expected at the next meeting.

A petition has been presented to the Court of Chancery by Mr. A. Pulbrook, on behalf of a creditor, to wind-up the East Botallack Consolidated Mining Company (Limited).

At the Port Phillip and Colonial Gold Mining Company (special) meeting, on Tuesday (Mr. J. D. Powles in the chair), an amalgamation with the Cinnes Company was agreed upon. Details in another column.

At the Copiapo Extension Railway Company meeting, yesterday (Mr. Holland in the chair), it was stated that a gradual extending development was shown—a complete suppression of cart competition secured, and in the working of the line itself there had been no failure, no accidents to lament, or interruption of communication to record worthy of any remark during the period over which the report extends. Some progress had been made in coal burning, and Mr. Vivian confidently hoped that with the engine now prepared there would be no difficulty attending the use entirely of coal for the future. The financial position is also good. These were by no means discouraging results, from which two points of consideration principally arise—that poor ores were increasing upon the line, and from all appearance would continue doing so, as burrow working (desmontes) has in the present day proved remunerative to speculators; and that their tariff was low on this class of ore, purposely so done to foster and give life to that speculation. Chanarcillo Mines keep poor, but the vast desmontes collected would, if nothing else turn up, give work for many years to come. There was no reason, however, for doubting that Chanarcillo (apart from desmontes) had yet a very long life before it. Poor ores were only now engaging attention, and of such quality ore as can at this moment be turned to account (8 marks per cajon), there were in all probability many mines of great wealth to be explored. When the Chanarcillo Railroad was first in operation 12·16 marks per cajon was considered the lowest paying percentage, now we see ores of half that produce operated upon successfully.—The Chairman, in proposing the adoption of the report, congratulated the shareholders upon the improved state of the traffic, and hoped that before long the directors would be in a position to declare satisfactory dividends.—Mr. Fletcher seconded the motion, which was put, and carried unanimously.—A vote of thanks to the Chairman terminated the proceedings.

An extraordinary meeting of the Grand Duchy of Baden Chartered Mining Company is called for Nov. 16, to consider a proposal for a winding-up.

Hancocks' Foundry and Engineering Company has been formed, with a capital of 100,000*l.*, in shares of 10*l.* each, to purchase, for 40,000*l.*, the foundry and engineering works of Messrs. William Hancock and Son, at Fenton, North Staffordshire. The works have been established upwards of 70 years, and the present senior partner has had the management for more than 30 years. A large trade is already carried on in the manufacture of iron bridges, railway chairs, boilers, hot-water apparatus, &c., and the connection comprises numerous collieries, railway, and gas companies, breweries, flint, and other mills, China and earthenware manufactories, &c.; and it is observed that, owing to the rapid increase in collieries and iron furnaces and works in North Staffordshire, the necessity for extended engineering works is also daily increasing, and that with such a connection this company cannot fail to command a large and profitable trade. The purchase-money is to be paid, 18,000*l.* in cash, by instalments extending over two years, and 12,000 in shares fully paid up, but upon half of which no dividend is payable until the other proprietors have received 8 per cent. per annum for five years. Mr. Hancock, senior, joins the board, and Mr. J. W. Hancock, his son, who has been 16 years connected with the works, will act as general manager. No cessation will be caused by the transfer of the works to the company.

The Thames Iron Works, Ship Building, Engineering, and Dry Dock Company, has paid a dividend at the rate of 10 per cent. per annum for the half-year ending June 30 last, free of income tax.

It is understood that actions have been commenced against the directors of the East of England Bank by individual shareholders, on the ground of their having been led by misrepresentation to purchase shares, and on other grounds of fraud. An attempt will also be made to fix the liability in respect of shares disposed of just before the suspension upon the parties who held them previously, and who sold them with the knowledge of what was coming.

A deputation from the firm of Chubb and Fry, of Bristol, introduced by Mr. Berkeley, M.P., had an interview with the Right Hon. T. Milner Gibson, at the office of the Board of Trade, on their invention for communication on railways.

Austrian Lotteries in England.—The Imperial and Royal Austrian Bank are freely distributing through the post prospectuses of an Austrian lottery, the prizes of which are to be paid through them. The circular accompanying purports to be dated from Frankfort-on-the-Maine, and, to evade the English law, the remittances are to be made to that city, although the Post-Office orders are to be made payable in London. Whether many Englishmen will be found willing to make their 10*l.* remittances to a comparatively unknown German banker remains to be seen; from the circumstance that the prospectus does not state the amount to be annually drawn, nor the number of years during which the drawings are to continue, the prospects of the subscribers would not appear to be particularly encouraging. As it is proposed that every subscriber shall receive, under the most unfavourable chances, 15 per cent. more than he subscribes, it follows that, inasmuch as 120,983,000 florins are to be returned for 40,000,000 subscribed, an enormous time must elapse (assuming that it is not arranged that all the heavy prizes shall fall to the proprietors of the lottery) before the prizes can be drawn—in fact, the time required to earn 80,983,000 florins with a capital of 40,000,000 florins, *minus* the amount repaid as prizes. If there be found English capitalists sufficiently thoughtless to enter upon such hazardous speculations as this, they will have themselves only to thank if they are disappointed.

Large Arrival of Copper.—The largest cargo of copper that ever entered Swansea has been received by Messrs. H. Bath and Sons during the past week, the *Emily Faithful*, of Tal tal, bringing no less than 1200 tons of regulus, the marketable value of which is about 50,000*l.*

Mining in Cardiganshire.—We have received from Mr. John Rees of Newquay, a box of specimens of ore, obtained from the land of Mr. David Evans, of Vrondoley, and consisting of stones of lead in a matrix of quartz and mundic, embedded in sandstone, the minute crystals of mundic giving the stone a very pretty appearance. Mr. Rees states that the rocks are very convenient for shipping, and deliver the rubbish to the sea, the distance from the harbour being only about 400 yards. He believes plenty of lead ore could be got when the mines are in working order, and that the sett could be obtained upon easy terms.

The Tin Standard.—The standards for tin ores were reduced on Monday last. Common was reduced 1s. per cwt.; fine, 1s. per cwt.; and superior fine, 2s. per cwt. The standards are now as follows:—Common, 93s.; superior common, 94s.; fine, 96s.; superior fine, 97s. The price of metal remains as before. Messrs. E. L. Budd and Co. report the market totally neglected as regards foreign.—*West Briton.*

**Died,**—On October 17, Mr. William Reay, jun., aged 35 years, whose name is well known to the readers of the *Mining Journal* as the contributor of many valuable communications upon the subject of Gold in Wales. Although still a young man, Mr. Reay had had considerable experience in his profession, both in this country and abroad, and succeeded, in every position, in securing the respect and esteem of all with whom he was connected. Mr. Reay was born at Walker, near Newcastle-on-Tyne, and, after receiving the earlier part of his education in France, continued his studies with Mr. Thos. Richardson, Ph. D., to obtain the advantage of laboratory practice, visiting soon after different mines (lead, copper, &c.) for the acquisition of geological surveying. After this he entered into an engagement for five or six years as an assayer with the Bella Raquel Company (Hiendelencina), province of Guadalajara, in Spain, and, upon his return to England, accepted an engagement with the St. John del Rey Company as reduction officer and assayer, passing in this position five to six years in activity. At the conclusion of his period of service he returned to England, and proceeded to Chili, accepting the position of Government assayer for five to six years, and long occupying the chair of President of the Mining Board, receiving, at the expiration of his engagement, from the Government the highest testimonials, not only for his skill as an assayer, but also for his zeal and integrity in an office of great trust and susceptible of bribery. Returning to England, he was for a short time occupied in making surveys for gold companies in Wales, Cornwall, &c., and was lastly engaged by Mr. C. Saunders, of Liverpool, in behalf of Mr. J. J. Tasso, for exploring the almost unknown gold regions near the Amazon, in the province of Parahyba, in the Brazils.

Mr. Reay proceeded to Parahyba in Sept. last, in company with Mr. Thomas Andrew, mining captain, who during 18 years was occupied in the mines of Gongo Soco, and in those of St. John del Rey, in the province of Minas Geraes; and by the extensive mineralogical knowledge Mr. Reay possessed they were enabled to discover in the short space of five months, during which he was staying there, eight gold mines, two of which were of extraordinary richness. From the appearance of the district, Mr. Reay asserted that others still richer must be discovered there, but owing to the short time he could employ for the exploration, and also from the want of essential requisites (the country being still in its primitive and unexplored state, without those resources civilisation affords, Messrs. Reay and Andrew being the first two scientific persons who visited it), the systematic prospecting was not completed. Now the existence of that new mining district being established, and it being probable that another more successful person may come to reap the fruits of these discoveries, it is fit that for the memory of its discoverer, Mr. W. Reay, this most important fact should be made public. Mr. Reay was full of hopes of being able to return to the land of his future glories, to earn a greater reputation by developing the mines of so rich a region.

## LEAD ORES.

Sold on the 20th October.

| Mines. | Tons. | Price per ton. | Purchasers. |
|---|---|---|---|
| Isle of Man Mining Company | 100 | £25 5 6 | Stock & Co. |
| **Sold on the 24th October.** | | | |
| East Logylas | 70 | 13 3 0 | Panther Co. |
| Glogfach | 50 | 16 17 0 | Sims, Willyams, & Co. |
| Cwmystwith | 120 | 13 6 0 | ditto |
| **Sold on the 25th October.** | | | |
| Great Laxey | 100 | 25 2 6 | J. & J. Williams. |
| **Sold on the 27th October.** | | | |
| Westminster | 40 | 13 6 6 | Walker, Parker, & Co. |
| Mount Pleasant | 30 | 13 16 0 | Newton, Keates, & Co. |
| Hendre Ucha | 8 | 13 10 6 | ditto |
| Bryngwyn | 10 | 13 17 6 | A. Eyton. |
| Pant-y-Mwyn | 14 | 13 6 6 | Walker, Parker, & Co. |
| Nant-y-Car | 3½ | 11 0 6 | Newton, Keates, & Co. |
| ditto | 2½ | 6 10 6 | ditto |
| Dyfngwm | 12 | 13 2 6 | Walker, Parker, & Co. |
| Llanerchyraur | 13 | 13 10 6 | ditto |
| Caeconroy | 6¼ | 14 9 6 | ditto |

## BLACK TIN.

Sold on the 21st October.

| Mines. | Tons | c. | q. | lbs. | Price per ton. | Amount. | Purchasers. |
|---|---|---|---|---|---|---|---|
| Trevenen, &c. | 9 | 5 | 3 | 1 | £55 10 0 | £ 508 7 3 | —Entwoven & Sons. |
| ditto | 1 | 8 | 0 | 18 | 48 10 0 | 68 5 9 | — ditto |
| **Sold on the 25th October.** | | | | | | | |
| St. Day United | 15 | 9 | 0 | 16 | — | 803 14 9 | — — |
| **Sold on the 26th October.** | | | | | | | |
| Wh. Grenville | 10 | 18 | 1 | 9 | 62 0 0 | — | —Mellanear, |
| ditto | 2 | 12 | 1 | 4 | 50 0 0 | — | — ditto |

## COPPER ORES.

Sampled Oct. 12, and sold at Tabb's Hotel, Redruth, Oct. 27.

| Mines. | Tons. | Price. | Mines. | Tons. | Price. |
|---|---|---|---|---|---|
| South Caradon | 77 | £14 5 6 | West Damsel | 40 | £4 1 0 |
| ditto | 76 | 7 9 6 | Craddock Moor | 84 | 5 13 6 |
| ditto | 75 | 6 6 0 | ditto | 63 | 5 19 6 |
| ditto | 60 | 14 5 6 | ditto | 45 | 7 7 0 |
| ditto | 58 | 7 17 0 | ditto | 21 | 3 8 0 |
| ditto | 49 | 6 8 0 | ditto | 14 | 7 7 0 |
| ditto | 42 | 19 13 6 | Fowey Consols | 80 | 4 19 6 |
| ditto | 41 | 5 18 6 | ditto | 66 | 5 13 6 |
| Clifford Amalgamated | 94 | 1 12 6 | ditto | 64 | 5 19 0 |
| ditto | 75 | 2 13 0 | Hallenbeagle | 67 | 4 5 0 |
| ditto | 70 | 4 3 6 | ditto | 61 | 4 7 6 |
| ditto | 60 | 3 11 6 | ditto | 46 | 4 13 6 |
| ditto | 58 | 2 7 0 | ditto | 34 | 9 14 6 |
| ditto | 45 | 4 12 6 | Great Wheal Busy | 41 | 3 4 6 |
| ditto | 30 | 6 13 0 | ditto | 40 | 3 6 0 |
| Phœnix Mines | 102 | 3 1 6 | ditto | 37 | 2 1 6 |
| ditto | 91 | 2 1 0 | ditto | 31 | 1 4 0 |
| ditto | 70 | 2 15 6 | ditto | 30 | 1 15 6 |
| ditto | 59 | 2 10 0 | ditto | 2 | 33 18 0 |
| ditto | 50 | 4 3 6 | Great North Downs | 79 | 3 0 6 |
| ditto | 38 | 2 8 0 | ditto | 75 | 4 4 6 |
| Tywarnhaile | 85 | 1 19 6 | ditto | 19 | 9 9 0 |
| ditto | 62 | 2 2 0 | Glasgow Caradon | 63 | 3 7 0 |
| ditto | 48 | 2 8 6 | ditto | 58 | 2 18 0 |
| ditto | 41 | 2 5 6 | ditto | 39 | 2 7 6 |
| ditto | 35 | 5 16 0 | Boscawen | 51 | 2 7 6 |
| ditto | 32 | 2 2 6 | ditto | 31 | 2 17 0 |
| ditto | 30 | 7 13 6 | ditto | 23 | 8 10 0 |
| West Damsel | 71 | 3 16 0 | Falmouth and Sperries | 54 | 2 5 0 |
| ditto | 59 | 4 10 6 | North Grambler | 33 | 5 8 0 |
| ditto | 56 | 3 16 6 | Grambler, &c. | 16 | 7 7 6 |
| ditto | 51 | 3 19 0 | East Wheal Ellen | 16 | 3 18 0 |
| ditto | 43 | 4 14 6 | | | |

### TOTAL PRODUCE.

| | | | | | |
|---|---|---|---|---|---|
| South Caradon | 478 | £4834 9 0 | Great Wh. Busy | 181 | £ 499 5 0 |
| Clifford Amalgam. | 432 | 1402 3 6 | Great North Downs | 173 | 735 8 0 |
| Phœnix | 410 | 1141 18 0 | Glasgow Caradon | 160 | 471 17 6 |
| Tywarnhaile | 333 | 1009 0 0 | Boscawen | 105 | 404 19 6 |
| West Damsel | 320 | 1317 12 0 | Falmouth & Sper. | 34 | 76 10 0 |
| Craddock Moor | 227 | 1358 3 6 | North Grambler | 33 | 178 4 0 |
| Fowey Consols | 210 | 1153 7 0 | Gram. & St. Aubyn | 16 | 118 0 0 |
| Hallenbeagle | 208 | 1097 6 0 | East Wheal Ellen | 16 | 62 8 0 |

Average Standard £122 8 0 | Average Produce 6½%
Average Price per ton £4 15 0
Quantity of Ore 3336 tons | Quantity of Fine Copper, 204 tons 15 cwts.
Amount of Money £15,860 11 6

LAST SALE.—Average Standard £128 0 0.—Average Produce 5⅝%
Standard of corresponding sale last month, £123 19 0.—Produce, 6½.

### COMPANIES BY WHOM THE ORES WERE PURCHASED.

| Names. | Tons. | Amount. |
|---|---|---|
| Vivian and Sons | 450 5-6 | £3744 16 10 |
| Freeman and Co. | 221 | 1109 1 6 |
| Grenfell and Sons | 291¼ | 2037 18 11 |
| Sims, Willyams, and Co. | 312½ | 1827 13 9 |
| Williams, Foster, and Co. | 606 | 2344 16 0 |
| Mason and Elkington | 342¾ | 1823 8 2 |
| Bankart and Sons | 113 | 251 6 6 |
| Copper Miners' Company | 186 5-6 | 994 19 1 |
| Charles Lambert | 496½ | 1655 19 6 |
| Newton, Keates, and Co. | 109 | 477 12 3 |
| Sweetland, Tuttle, and Co. | 124 | 206 0 0 |
| Penclawdd Copper Co. | 83 | 386 19 0 |
| Total | 3336 | £15,860 11 6 |

Copper ores for sale on Thursday next, at Tabb's Hotel, Redruth.—Mines and parcels.—Clifford Amalgamated 730—West Seton 470—Wheal Seton and Pendarves 354—South Tolgus 230—North Roskear 205—East Grenville 197—Tolcarne 172—East Pool 167—South Frances 124—Wheal Basset 123—Nangiles 102—East Basset 89—Wheal Grenville 35—West Stray Park 31—South Condurrow 20—Total, 3049 tons.

Copper ores for sale on Thursday week, at Tabb's Hotel, Redruth.—Mines and parcels.—Wheal Margery 429—East Carn Brea 321—Prosper United 310—West Basset 278—Levant 210—East Rosewarne 163—Treloweth 160—Par Consols 101—Tolvadden 92—Wheal Buller 86—Copper Hill 75—Boscaswell 70—New Rosewarne 69—Botallack 44—Wheal Trannack 42—North Basset 40—Wheal Curtis 32—Wheal Unity Consols 18—Providence Mines 16—Emily Henrietta 12—Alfred Consols 10—Pembroke 2=2675 tons.

## WATSON AND CUELL'S MINING CIRCULAR.

WATSON AND CUELL,
MINING AGENTS, STOCK AND SHARE DEALERS, &c.
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

Messrs. Watson and Cuell having made arrangements for transferring their weekly Circular, which has had so large a circulation during the past ten years, to the columns of the *Mining Journal*, their special reports and remarks upon Mines and Mining, and the state of the Share Market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. Watson, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium published in 1843 Mr. Watson was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. Watson and Cuell have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share-dealing than there is at present; and, from the lengthened experience of Messrs. Watson and Cuell, they are emboldened to offer, thus publicly, their best services to all connected with mines or the market, as they have for so many years done privately, through the medium of their own Circular.

Messrs. Watson and Cuell transact business in the purchase and sale of mining shares, and other securities, payments of calls, receipt, and transmission of dividends, obtaining information for clients, and affording advice, to the best of their knowledge and judgment, based on the experience of more than 30 years active connection with the Mining Market.

Messrs. Watson and Cuell also inform their clients and the public, that they transact business in the public funds, railways, docks, insurance, and every other description of shares dealt in on the Stock Exchange.

Messrs. Watson and Cuell are almost daily asked their opinion of particular mines, as well as to *recommend* mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

Messrs. Watson and Cuell having agents and correspondents in all the mining districts, and an extensive connection among the largest holders of mining property, have the more confidence in tendering their advice on all matters relating to the state and prospects of mines and mining companies, and are enabled to supply shares in all the best mines at close market prices, free of all charges for commission.

Money is getting easier and confidence returning, and the reaction in mining shares, when it comes, may be sudden and great. It is not a bad time, therefore, to look around, and see what is worth picking up after the great depreciation in most kinds of property. In one or two mines discoveries are daily looked for, and many with good prospects are at a very low price; so that we think a selection might be made to give a profit of 25 to 50 per cent. in a few months. We have not had time this week to go thoroughly into the matter, but will have a list ready early next week of dividend, progressive, and speculative mines.

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*On the Steam-generating Power of Marine and Locomotive Boilers.* By Mr. Charles Wye Williams, Assoc. I.C.E., &c. London: Spon.

Mr. Williams's valuable contributions to the chemistry of combustion, the construction of furnaces, and the improvement of steam-boilers, have won for his writings on such topics a wide-spread and deserved popularity. In his last work on *Heat*, he has been considered by many to have ventured too largely into theoretical views; but this is forming a very shallow estimate of a most important subject. Indeed it is one of the errors of too many excellent practical men at once to exclaim against anything that appears to them a novelty, as being theoretical, unless they can immediately appreciate its application in practice; thus forgetting that theory must precede practice. But Mr. Williams is not the mere propounder of theories; he is too thoroughly practical in all his writings to be mistaken in that respect; and where it happens that he is not immediately apprehended, the reader is always compensated by the natural result of the outpourings of a full and earnest mind, highly suggestive, and begetting in others a like interest in some overlooked investigation.

To the introduction of the locomotive engine we owe the multi-tubular system of boilers; and to their efficiency in railroads their introduction in the construction of marine boilers. The prevailing opinion has been that for the success of any such boilers, whether for locomotive or marine purposes, the great desideratum was to have the greatest possible number of tubes, and of the greatest possible length. This opinion arose from practice, which certainly had the merit of independence of all theory. It was considered to be a matter of course that what was good must be better for being multiplied. Let those who presumptuously affect to despise theory ponder over the wisdom of working out the proof of errors by expensive practice, rather than by that process of thinking over and well weighing a matter beforehand, in all its bearings, which they are but too prone to stigmatise as mere theory, which every practical man must despise.

We have been drawn into these introductory observations, being quite prepared to find advocates appearing to uphold views, on the support of which many may have staked their scientific reputation, and who can appeal in justification of their own statements to authorities of no small note. We are here inclined to ask, is it not this pusillanimous reliance on such accepted authorities, and not the occasional appearance of theories, that is the rock on which the hopes of practital men are too often shipwrecked?

In regard to the commonly received value of the heating surface of tubes, Mr. Williams will startle many prudent and clever practical men by the statement—"That so far from that surface being the measure of the heat-transmitting and evaporative power, it may, in fact, be altogether omitted in our calculations, and for the measure of that power we shall have to look to a different portion of the boiler—a portion hitherto absolutely unnoticed and unappreciated by engineers." This "hitherto neglected surface of the face-plate," is the portion meant of which he says—"Whatever may be the gross area of the face-plate in marine-boilers, three-fourths, certainly not less than two-thirds of it, at the least, should be capable of receiving the direct action of the heated current from the furnace." After discussing and illustrating these statements, he proposes—"Substituting for the ordinary long tubes sets or series of short tubes, or flues, at short distances apart, the end of each set, or series, being fitted into tube or face-plates." In the 112 furnaces of the *Great Eastern's* boilers the value of these surfaces "was altogether ignored, yet these were the real steam generators." As draught is always an important consideration, Mr. Williams finds, "That in proportion as the chimney draught is increased, so is the heat-transmitting power of the face-plate, whereas that of the tube surface is diminished." After discussing the views of Stephenson, Brunel, Lloyd, Clark, and others, he affords details of experiments on a large scale, with tables and diagrams, which will be found highly interesting and instructive. We cannot, therefore, but consider this treatise as a valuable contribution to the nationally important subject on which it treats, and the perversities which it tends to expose, as attaching to established practice, but which latter one might have hoped to have found less prevalent in such a scientific department as that of modern engineering. However, it is the fate of all great improvements to work their way tardily, and to meet with opposition when they in the least interfere with the combined interests of an influential class of the community.

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New Water-Gauge for Steam-Boilers.—An important improvement upon the glass water-gauge tube at present in use has been introduced into this country by Mr. D. F. Leblanc, of Fleet-street, the inventor being Mr. Carré, whose ice-making machine in the French department of the recent International Exhibition attracted so much attention. The glass tube used is of the ordinary description, and Mr. Carré's invention consists in enveloping it in a brass casing, perforated with circular holes, exactly opposite to each other. Now, this metallic casing serves two distinct and very important purposes. In the first place, it effectually protects the glass from fracture, but it also enables the height of the water in the gauge to be determined with certainty. In combination with the glass and water the orifices in the metallic casing become a series of lenses, the empty glass giving the effect of a cylindrical lens, whilst it assumes the power of a biconvex spherical lens when filled with water. The natural consequence of this is, that upon looking through either of the orifices above the water level the opposite holes appear as of a vertical oval form, whilst below the water line they appear in their natural form. The greatest objection to the use of the simple cube lies in the fact that there is no means of determining with certainty whether it is full or empty. Thus a boiler may be many inches too full, while the gauge may appear quite empty; and, again, the gauge may be thought full while the top of the fire-box is being burned out. With the Dioptical Water-Gauge—for so the inventor designates his protected tube, such a mistake is impossible, since in the one case all the holes would appear to be round, whilst in the other they would all appear to be oval. In a modification of this arrangement the glass tube is entirely dispensed with, a series of sight holes with lenses being provided. If a quadrangular tube be taken, the sides of which are drilled with holes opposite each other, and if plano-concave lenses be fixed into these holes, the concave sides of the lenses being towards the axis of the tube, and the *foci* a little behind the opposite side, the hole opposite to the lens looked at will appear considerably smaller in the empty part; in the part containing water, the index of refraction of water being about the same as that of glass, the concavity of the lens is compensated by the convexity of the water, and the opposite hole will reappear in its nearly full diameter. The gauge is, without doubt, one of the most efficient at present in the market.

Economy in the Use of Coal.—With a view to obtain a clear bright fire with the utmost economy in a common stove, an improved fire invigorator has just been introduced by Mr. Snook, and consists of an improved form of deflector, which is constructed of cast-iron, and occupies the space between the fire-bars. After lighting the fire, and permitting it to burn for about four minutes, with the apparatus closed, so as to form a blower, a large concave elliptical plate, immediately over the bars, and suspended on end pivots, was tilted over to form the deflector. Above this are the necessary louvres for regulating the draught. The heat thrown out is large in comparison to the fuel burned, and the fire has a warm red glow, without flame or smoke. The advantages claimed for the invention are—that fires are lighted without the slightest difficulty; that the whole heat from the fuel is thrown into the room instead of escaping up the chimney; that 50 per cent. less fuel is consumed; that there is no smoke, and that nothing but mere ashes are left unburned.

## Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be regularly filed on receipt: it then forms an accumulating useful work of reference.

We must not be considered responsible for the opinions expressed by our correspondents. Our columns are open for a free discussion of scientific questions, and while the views of many writers may be considered extreme or untenable, it must always be remembered that space will be readily devoted for communications from those who object to statements made, or may wish for a further elucidation of matters so brought under discussion. Many valuable ideas are lost for the want of an opportunity to make them public, as many extravagant opinions are entertained and enforced which would be easily refuted on ventilation through the press.

Iron Rust.—In answer to "B.," in last week's Journal, I have found large quantities of ochre on my property at Hetton, in Northumberland, and have used some of it; it makes a good red-brown paint. Whether it is to be got in such quantities as "B." would require I cannot say; it is above the limestone, and the joints are filled with it.—F. Fearnley: *Adderstone, Belford, Oct. 24.*

Utilisation of Town Sewage.—In last week's Journal you notice the application of a deodorising substance at barracks and other public buildings, remarking that tanners' waste bark charred was one of the principal component parts. Would someone interested kindly, in next week's Journal, say what are the others, and in what proportions?—A Constant Reader: *Leeds, Oct. 26.*

Gas Economiser.—"J. S." (Fermoy).—The address of the patentee of Woodward's patent gas improver we do not know. It can probably be obtained through any London gas-fitter. The carburator described in the Journal of Oct. 15 is the invention of the Rev. W. R. Bowditch, of Wakefield, to whom application might be made.

Crosher Valley and Port Madoc Slate Company.—I should be glad if any correspondent, acquainted with this property, would oblige by communicating some information on its state and prospects, for the guidance of shareholders, previous to the forthcoming meeting. It would also be satisfactory if the directors would have a report prepared by a disinterested agent.—Subscriber.

Copper Mines.—I observe a letter in the Journal of Oct. 15, signed "Mine Adventurer," many of the remarks in which are very just. Abuses of every description seem to have crept into the smelting business in all its branches. It is true that every establishment ought to pay its own servants, and why should not the smelters pay theirs? The mine is taxed in every way, first with sampling the ores, then with weighing off the day after the sale. The heavy dinner bill every mine is taxed with; the landlord where such sales are held seems to supply what he thinks proper, and makes room for some ten or twenty persons who may happen to be idling about, waiting the dinner hour, and when the manager or purser of such mines as sell ores reaches the dinner table, except he be the fortunate Chairman, he can scarcely find a chair. The choicest portion of the dessert is taken to strangers. I have heard of gentlemen who attend these sales leaving after they are over, and going away, on account of this imposition and nuisance. Some of the agents of these smelting companies are largely connected with the shipping interest, and an understanding frequently exists between these gentlemen who shall purchase certain ores; therefore the buyers' agents, who happen to have vessels discharging coals at such ports, buy without competition the ores of certain mines. It is now of so frequent occurrence that the owners of mines discuss and contemplate shipping their ores to Liverpool, or some other port.—A Cornishman: *Penzance, Oct. 19.*


# THE MINING JOURNAL
## Railway and Commercial Gazette.

*LONDON, OCTOBER 29, 1864.*


In last week's Journal we gave an abstract of the Report of the Royal Commissioners appointed to enquire into the condition of all mines not under the Act of 1860, and to-day we commence the publication of the Report *in extenso*, in the hope that it may lead to the necessary improvements in connection with the working of mines being introduced. The points especially referred to by the Commissioners are insufficient ventilation, and insufficient means of bringing the miners to surface: both of these appear to produce disease amongst the miners, which, once contracted, it is impossible to eradicate. The air which the men have habitually to breathe in the freshest part of the mine is far more suffocating than that in a theatre gallery when the house is most uncomfortably hot, whilst compared to their ordinary working places even this must be regarded as positive perfection. In some of the places examined it was impossible to obtain samples of the air for analysis, the candles burning so dimly that the tubes could not be sealed with the blow-pipe, and, consequently, could not be preserved. With respect to the mode of ingress and egress, the system is a greater tax upon the strength and energy of the miners than any to which our worst criminals are subjected; and, as the food which their honest labour provides them with is materially inferior to that on which criminals are fed, they naturally suffer from the excessive labour, and are altogether unable to bear the sudden alternations of heat and cold to which they have to submit.

The report will, no doubt, be well considered by mine adventurers generally, and it will be to their own interest to see that the suggestions contained are speedily attended to; for it must be generally understood that it is of advantage to all employers to secure the services of strong and healthy men, in preference to those of weak and delicate constitutions; and that although the proper ventilation of the mines, and the provision of additional accommodation in the shape of a man-engine, or safety-skip, for carrying the men in and out of the mines, may necessitate a trifling additional outlay, the compensation will be more than equal, inasmuch as a larger amount of work would be obtained from the men for the same amount of wages. This alone, regardless of the importance of rendering the occupation of the miner more healthful from humane considerations, should suffice to secure an improvement; and if such improvement be made, the object of the Commission will be well achieved.

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## NOTES ON LECTURES BY Dr. PERCY AT THE ROYAL SCHOOL OF MINES—No. III.

In continuing the subject of Slags, Dr. Percy observed that he should retain the old formula for silica, expressing the proportion of the acid as three times that of the base, and explained the formulæ representing the bibasic, tribasic, and sesquibasic silicates. In expressing silicates, he remarked, in chemical language we are apt to be somewhat confused by the varieties of nomenclature adopted by different chemists. An easy and most simple plan is that of using the initial letter of different bodies to express them, thus—C for lime (calcium), S for sulphur. With respect to the constitution of silicates, they may be either of definite or indefinite chemical composition. When of the latter class, they must consist of two or more definite silicates, or of a solution of one silicate in another. Slags may seem perfectly crystalline, and yet not be of definite chemical composition. The base of a silicate may be replaced by another base in many cases; for example, the oxide of iron may be separated from refinery slag and replaced by lime on heating that slag with marble. The external characters of slags are very various; we have not unfrequently highly-crystallised slags, then we have them in the state of glass, like obsedian, or non-crystalline, which outward appearance is common when the slags are nothing but aggregations of crystals. The temperature and pace of cooling affect this appearance much; thus rapid cooling tends to produce the vitreous state in slags, and conversely slow cooling the crystalline structure. In the same piece of slag the two structures, crystalline and vitreous, may be produced by cooling it at two different temperatures. In some slags, and a good example is in some of the stages in the manufacture of glass, we find isolated crystals scattered through a glassy matrix. In other cases, there occur spheroidal aggregations or agglomerations of crystals, good examples of which may be seen in cooling crown glass. Again, we have beautiful star-shaped masses of crystals. Nature presents us with something similar to these artificial mixtures in obsedian, in which are often seen scattered masses of crystals. In crown glass-works may, however, be found the best illustrations of these peculiarities of certain silicates. Glass in its ordinary state is vitreous, and when crystallised is said to be devitrified. The most familiar example of the devitrification of a body originally vitreous is that of barley-sugar. When first made this compound is clear and vitreous, but after keeping it becomes opaque and crystalline. The air in this case effects the change, and we may effect the same change in slags artificially. If a slag is of definite composition, under certain conditions we may convert it into a crystalline mass of exactly similar composition. Change of colour is an invariable characteristic of these changes of structure; for example, if we take a piece of green bottle glass and expose it to any high temperature, and allow it to cool, it will have become perfectly crystalline, and with this change in structure it will have passed from a clear mass to an opaque one, and from a green to a blue colour. The blue colour it was believed at first was due to the presence of oxide of titanium, but we hardly think this can be so, for there are slags containing oxide of titanium which are not blue, and slags not containing oxide of titanium which are blue; we would rather believe it is due to oxide of iron. Oxide of iron has been found capable of conferring to glass at different temperatures all the colours of the spectrum. This variety of tint is most common in our iron slags. Devitrified glass becomes much harder and much less fusible than vitreous glass; also the former passes directly from the solid to the liquid state, whereas the latter passes through an intermediate pasty stage. It appears to have been satisfactorily demonstrated that glasses are less dense than the crystals from which they are derived. The blue colour of glass has been thought by some to be due to the presence of artificial ultramarine, but we know of no proof to that effect. Slags derived from certain smelting processes are of a very dark colour, due, as some suppose, to the presence of a large quantity of iron. This is erroneous, though there can be no doubt those slags which are of a deep olive green contain a considerable quantity of iron. The great interest in this subject of the colouration of slags lies in the experiments of some French chemists, which experiments would seem to prove that the dark colour of slags, and even when quite black, is owing entirely to the presence of sulphur. There are some cases in which slags present a beautiful irridescent surface. Other curious appearances are occasionally seen in slags, some being highly ascicular. Another curious appearance in slags is when ordinary iron slag as it flows from the furnace comes gently into contact with water; it immediately swells up, changes colour from black to white, and looks much like pumice stone. Again, another peculiar appearance is when molten slag as it falls from the furnace is caught by the blast, and blown away in filaments, like the finest hair produced by the glass-blower. The same sort of finely divided slag is common in some volcanic formations. A patent was lately taken out for making this fine hair from the slags flowing from an iron furnace, and composed of silicates of lime and alumina, and the patentee proposed to use it for manure. Also, another patent has been taken out for the use of this hair when finely ground as a substitute for casting sand.

Slags are often porous, presenting the appearance of honeycomb; and this structure would seem to be due to the spontaneous evolution of gas throughout the whole of the mass at the same time, but as to what that gas is we are not prepared to say. With regard to brittleness and toughness, there is a great variation in slags, some being extremely brittle, others equally tough. With respect to colour, we find also every diversity; in truth, we have them of all the colours of the spectrum, according as the metal in them varies. Red, as when with silica and dioxide of copper; orange green, as with iron, and indicating the presence of manganese; blue as iron also; violet, and all the shades of brown to the deepest black. With regard to fusibility of slags we must say a few words, for it is a most important point. Sometimes you require a slag as liquid as water; at other times it should be perfectly viscous. The importance of the right state of consistency in a slag is illustrated in the process of smelting copper, where, in the production of regulus, if the slag which has to be skimmed from it be not of exactly the required fluidity, its complete separation from the regulus is impossible. In silicates we have rarely to deal with those of lime. Of all the chemists who have written on the subject of slags, Berthier is the most important. This chemist, in speaking of slags, says—"Weight for weight, soda is more fusible than potash. The alkaline silicates never give a stony aspect. No silicate of alumina is completely fusible at the highest temperature of our furnaces. Silicates of alumina of the formula one equivalent of alumina, and one of silica, or one of alumina and two of silica, soften most of all. Amongst the alkaline earths the fusibility increases and decreases with the chemical force of the base. Silicates in admixture, generally speaking, melt more easily than when alone—*e.g.*, a mixture of silicate of alumina and lime melts more easily than either separately." Spontaneous disintegration takes place in certain slags after cooling, and this is due to an excess of lime. Alumina may act the part of an acid, or a base, and this is likewise the property of sesquioxide of iron. Of fluor-spar, as a flux, we may say that at 50° pyrometric temperature it does not soften, nor is it acted on, although at a higher temperature it melts, and presents a beautiful crystalline structure on cooling. Fluor-spar fuses perfectly in admixture with sulphates of barytes, and this is a most important fact to lead smelters; the temperature required is not above that of a good red heat. So, also, it melts very well with sulphate of lime in certain proportions. As to the point at which slags are fusible, we are badly off for experiments. A useful instrument for determining it is the pyrometer of Princeps. He makes first a series of pyrometric alloys of gold and platinum, 100 in number; in these the proportion of platinum to that of gold is gradually increased 1 per cent. Thus the melting point of gold will be the Zero of his scale, and the melting point of platinum the highest. Small particles of these alloys he takes, and places them in small indentations in a large cupel, numbering each. Placing, then, this pyrometer in the furnace, the temperature of which is to be ascertained, he watches which and how many of his globules are melted. By this means he arrives at a comparative idea of the melting point of any body.

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## COAL-CUTTING MACHINERY.

From the long discussion which has taken place in the columns of the *Mining Journal* upon the subject of the coal-cutting machines recently patented, our readers may have succeeded in arriving at some conclusion as to the relative advantages of the ordinary high-pressure and the trunk-engine, and though probably the majority will have decided in favour of the ordinary high-pressure cylinder, there can be no doubt that the trunk has, in some respects, a decided advantage, or, at least, an advantage which more than compensates for its defects. The supporters of the trunk-engine will be glad to learn that an improvement has recently been patented by Mr. J. G. Jones (one of the patentees of Ridley and Jones's machine) upon his own account, which, assuming the trunk-engine to be an improvement upon the high-pressure engine, is as far superior to Ridley and Jones's machine as is that to the original of Donisthorpe, Firth, and Ridley. The advantage claimed for Ridley and Jones's machine was that it was extremely compact, and well under the control of the workman; and in the machine now patented the compactness is equal, there is equal control, and there is the very important improvement that the pick can be made to strike its blows in any desired direction, and with the same nicety as with the hand of an experienced workman. In size the new machine need be no larger than the old, whilst by a very ready adjustment, either horizontal, vertical, or oblique cuttings can be made.

The simplicity of the adjusting arrangement is all that can be desired; it consists in employing a toothed-wheel and pinion, with which the piston and, of course, the connecting-rod, picks, and all attached to it, can be readily turned. By an ingenious arrangement, the wear and tear of the parts of the machine is not increased, since the toothed-wheel and pinion, which gives the machine such immense advantage over that of Ridley and Jones, is used only for changing the direction of the blows of the picks; as soon as they are in the desired position, the machine works precisely as though the wheel did not exist. It appears that Mr. Jones has been very successful in securing orders to erect his machine since his connection with Blaina, and no doubt is now entertained that the movable pick machine is that which will ultimately come into general use. That the machine does not admit of further improvement we do not say, but it is certainly more nearly approaching perfection than anything which has preceded it.

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British Enterprise in Germany.—It is well known that the Hibernia and Shamrock Collieries, which have been so frequently referred to as the only German mines worked with English capital that have returned profits, owe their development to the energy and perseverance of Mr. William T. Mulvany, late Commissioner of Public Works, Ireland, who has hitherto carried on the works with great zeal, and with the aid, almost exclusively, of English miners. Mr. Mulvany has succeeded in developing the resources of the district in a remarkable manner, and, in addition to this, has induced the Prussian Government to remove some of the most annoying restrictions to mining enterprise, and obtained from the railway companies over which Westphalian produce is carried an important reduction in their tariffs for carrying coal. In consideration of his efforts a diploma conferring the honorary burghership of Gelsenkirchen has been presented to him, accompanied by an address, of which the subjoined is a translation:—

"It is with much regret that we have learned that you have given up the position so long and successfully held by you as principal manager of the Hibernia Mine. About ten years ago you came to Gelsenkirchen to commence the undertaking which you have carried out with so much talent. You found Gelsenkirchen in an undeveloped condition, with bad roads, and one of the most insignificant stations on the Cologne and Minden Railway. With untiring zeal and admirable energy you devoted yourself to those duties which you had undertaken. You have been an example of industry to us; you showed us what a strong will and clear understanding can accomplish. Gelsenkirchen is now a flourishing place, prosperity reigns in its houses, and it has become one of the most important stations on the line. The name of Gelsenkirchen has, through its coal, become known in the most distant lands—in all parts of the world. For all this, Sir, you laid the foundation; pardon us, therefore, if we find the thought of a total separation so painful that we request you, also, for the future to continue connected with our community, and kindly to accept the accompanying diploma as a token of our acknowledgment and high respect. We beg you to retain a friendly remembrance of us, whilst we shall not forget the man of whom we may feel proud, whom our whole mining world honours."

The document is formally signed by the representatives of the commu-

nity, and a deputation was appointed to make the presentation, which was acknowledged by Mr. Mulvany in the following reply:—

"GENTLEMEN,—During my absence in England I was surprised and greatly gratified when I heard that the Community of Gelsenkirchen had conferred upon me the honour of electing me as Ehrenburgher of Gelsenkirchen; and I only regret that I cannot, in Germen, in a sufficiently clear manner, express my hearty thanks for this visit, and the very beautiful and artistic diploma which records this vote, and which I shall ever keep and refer to with pride and pleasure. One of the greatest benefits resulting from such industrial undertakings as that of our colliery of Hibernia is the direct advantage to the surrounding neighbourhood; and I rejoice exceedingly that even you, my honoured neighbours, who have especially had the best opportunity to watch every step of our work, our difficulties, and our exertions, so very fully acknowledge the principle of this advantage, and have thus given your judgment upon us, and our conduct of the undertaking under your eyes. The honour which you confer upon me really, and in the most pleasing manner, repays me for the many anxieties and labours which, as a stranger, I had to encounter in such an undertaking. I have watched from year to year, with increasing interest and hearty good wishes for your community, how Gelsenkirchen has grown up from a little village, of about 750 souls, to the importance of a town of between 3000 and 4000 inhabitants; and it is, and was ever, a source of great gratification to me to think that our undertaking had, even in a small way, originally contributed to this gratifying result. I hope still to have many opportunities of being useful in this country; and as an Ehrenburgher of Gelsenkirchen I shall gladly avail myself of every opportunity to give my humble assistance in promoting its interest; and be assured, in again thanking you for the honour, you have conferred on me, I shall never forget the goodwill and friendly feeling which we, as strangers, have ever experienced from you since our first arrival in your neighbourhood.

Two handsome testimonials, in the shape of pieces of plate, were also presented by the British agents and workmen at the collieries to Mr. Wm. Mulvany and his brother. The testimonial to Mr. Wm. Mulvany consisted of a massive silver epergne; subject, a palm tree, supporting an elegant glass bowl; oriental figures at base. That to Mr. T. J. Mulvany was of somewhat similar design, but the base was of rough hewn marble, surrounded with various mining figures.

## FOREIGN MINING AND METALLURGY.

The monetary crisis, and the indifferent situation of the iron trade in England, is calculated to have a hurtful influence on the Belgian works, but at present it may be said with satisfaction that the position of affairs appears very good. As regards the monetary crisis, it is only establishments of a secondary order which complain at present. The hesitation of the English market is spoken of only as a fact without influence upon the external relations of the country, which continue excellent. A recent adjudication has furnished a proof of the good state of Belgian metallurgy. Thus, a contract for rails has been adjudged to MM. de Dorlodot, Gendebien, and Blondiau; the lowest tender declared was 6*l.* 15*s.* 6*d.* per ton, a price which must be considered as high, having regard to the present position of the market. For the rest it may be remarked that rails continue to be sought after, and this notwithstanding the monetary crisis, which has a direct influence on new railway enterprises. Fish-plates and other maidriel were also tendered for on very fair terms. Advices from Charlerol, as well as from Liége, indicate a constant activity in the works, and a remarkable fixity in quotations. The Belgian Government has received from the Belgian Legation at Rome some information of interest to coalowners. Thus, it is stated, that the consumption of combustible by the Roman Railway Company, which is about 40,000 to 50,000 hectolitres annually, is supplied by the Cardiff collieries. The price is 12 fr. per ton under shed at Cevita Vecchia, and on the tenders of the locomotives the coal "returns" at 12. 16*s.* 9*d.* per ton. The supplies which arrive on account of the company are exempted from customs' duties. The director-general of the company gave the Belgian Consul to understand that at an equal price a preference would be accorded to Belgian coal, and particularly to that proceeding from the Mons Basin. Experiments with a view to the employment of coal from the South of France have failed in consequence of the onerous necessities arising from transport by railway, as well as in consequence of the inferior quality of the coal in question. From the Borinage we learn that certain strikes which had taken place are at an end. The most recalcitrant miners have resumed work, at the same time calling the attention of their employers to their position, and the reasons which tend in favour of an increase of wages. On their part the masters have shown a disposition to do all they can for the miners, but the present low prices scarcely permit them to think of a rise in wages, which would, probably, only lead to the unfortunate alternative of a diminution in the production. At Liége mention is made of a contemplated attempt on the part of some colliery owners to advance the prices of rich coal, which has been for some time in rather active demand. The Northern and Luxembourg companies have just reduced the transport rates for coal and coke, having Brussels for their destination, *viâ* Namur. From the North Belgian stations between Liége and Engis inclusively, the tariff will be uniformly 3*s.* 6*d.* per ton, being a reduction of more than 10*d.* per ton on present prices. The working of the Seraing Coal Basin, which the publication of the new tariff of the State has put in a position of inferiority as regards its competitors, united directly with the State network, will find a compensation in the development which will, probably, be acquired by its deliveries towards Brussels.

No appreciable change has taken place in the position of the French market. The adjudications which have just been made fully confirm the estimates indulged in as to the probable prices of wood for charcoal burning; ordinary charcoal, composed of two-thirds hard wood, is worth 9*s.* 8*d.* to 10*s.* per cubic metre, delivered *en halle*. This is the price which results from the average of the purchases made thus far at the sales of the Côte-d'Or, the Meuse, the Vosges, and the Haute-Marne. The course of the St. Dizier market has only varied very slightly, and what change has taken place has been rather in the direction of improvement than otherwise. There is some enquiry for charcoal-made pig for refining. Thus a small lot has been dealt in at 4*l.* 12*s.* per ton, and for a more important lot one holder has obtained conditions which carry the price to 4*l.* 13*s.* 4*d.* per ton, free at St. Dizier. All the forges are provided with orders, and a fair amount of activity generally prevails. The waters are very low, and a compulsory slackening of operations will result if the weather continues dry. Rolled irons are held firmly at 9*l.* per ton in warehouse at the works. Some considerable orders have come to hand from Paris and the South. Machine iron is neglected, its nominal price is 9*l.* 4*s.* per ton. A good demand prevails for iron wire at preceding rates. Founding industry has received a good many orders, which have checked the fall which had struck almost all articles; prices, however, do not rise. After a rather long period, a certain revival is noted in the deliveries of coal from the Pas-de-Calais, but this movement is far from reaching the importance which it will attain.

As regards the foreign metal markets, we may note that zinc, which had been maintained for several months in an exceptionally favourable position, appears to be losing ground every day. On the German markets—especially at Breslau and Hamburg—pressing orders to sell have caused prices to retrograde, without, nevertheless, the fall giving rise to great operations. At Hamburg, rough Silesian has fallen to 13 marks; and at Breslau the quotation has been reduced to 6⅞ and 7 thalers, according to quality, these terms being obtained with difficulty by holders, notwithstanding the efforts of these last to check the downward movement. Rough Silesian zinc is quoted nominally at 24*l.* 8*s.* per ton at Paris, and rolled zinc at 27*l.* 4*s.* per ton. At Brussels, rolled Vieille-Montagne and Corphalie is quoted at 28*l.*; ditto, from other sources, 26*l.* 4*s.*; rough zinc in ingots, first fusion, 24*l.* per ton. At Havre, zinc has made 23*l.* 12*s.* per ton. At Havre, Chilian copper has experienced very sensible fluctuations, the quotations of the last week, 87*l.* and 86*l.* 10*s.* per ton, have been reduced to 85*l.* per ton, at which rate 30 tons in bars were recently disposed of. On the German markets copper provokes little demand, but preserves nearly the same rates. Tin has been again falling on the Dutch market, Banca being offered at 60 fls. at Amsterdam and Rotterdam. Quotations of tin have been nominal at Paris, as well as on the German markets. Banca is priced at Paris at 106*l.*, Detroit at 102*l.*, and English at 103*l.* per ton. There is very little animation in lead, transactions being limited to the wants of the day; nevertheless, this article is recovering from the depression which weighs on the market.

THE EXPORT AND IMPORT OF COALS.—During September, 1864, there has been an increase as compared with the corresponding month of last year in the exports of coal from all the ports of the United Kingdom, except those of Scotland. The northern ports sent out 430,886 tons, an increase of 71,384 over last year; the Yorkshire ports, 35,083, an increase of 6744; Liverpool, 61,805, an increase of 3755; the Severn ports, 215,894, an increase of 6861 tons; and the Scotch ports, 46,899 tons, being a decrease of 6581 tons. The total export during September, 1864, was 790,547 tons being an increase over September, 1863, of 82,163 tons. The exports from January to September inclusive in 1864 were 6,053,950 tons, being an increase over the same period of 1863 of 409,861 tons. The largest export during September, and also during the three quarters named, were to France, amounting during the month to 134,273 tons, and during the three quarters to 1,077,601 tons. The smallest exports were to the Sandwich Islands, amounting to 417 tons. The imports of South Wales and other coals coastwise into the port of Liverpool for the month of September, 1864, amounted to 8763, being an increase over the same month in last year of 1370 tons. The imports of the same class during the three-quarters of the year ending September, 1864, amounted to 98,493 tons. The total exports coastwise during September, 1864, were 11,877 tons, being a decrease as compared with September, 1863, of 2864 tons. The total imports of seaborne coal into the port of London during September, 1864, were 234,385 tons, being a decrease as compared with the same month last year of 39,802 tons. The statement of the same imports for the three quarters of a year ending September, 1864, show a decrease of 713 ships, and 31,261 tons of coal.

VALUABLE DISCOVERY OF MINERALS AT RANKINSTON, AYRSHIRE.—It may be interesting for the mining world to know that the lands of Rankinston, the property of Mr. Robert Salmond, in the parish of Coylton, have been for some time subjected to rigid examination by Mr. Lumsden, practical mining engineer, and with singular success. In a bore about 80 fms. two blackband ironstones have been discovered—the first 3 ft. 6 in. thick, the second 2 ft. 6 in. thick, with a stratum between the positions of 6 ft. 8 in. The first of these seams has been tested from the calcined stone, and 3 ft. of it yields 63·3 per cent. of metallic iron; the remaining cleave of 6 in. yields 48 per cent. of metallic iron. The second seam is the Burnfoot position, and is well known in the district. In a different part of the same property another blackband has been discovered, 18 in. thick, and a brown stone, about 2 in. thick, at the depth of about 10 fms. These have not yet been tested, but the samples promise well. Other minerals are plentiful on the estate, such as hematite iron-stone, yielding 60 per cent. of metallic iron; limestone, producing 60 per cent. of metallic lime; and coal for any marketable purpose—house coal, smithy coal, furnace coal, blind coal, and gas coal, the latter yielding 10,500 cubic feet per ton of volatile matter; also, kelloe, of which there is a large field, producing 48 imperial gallons of paraffin oil per ton. It may be also stated that samples of argillaceous, calcareous, and mineral band have been met with on the property as leaders, yielding from 30 to 40 per cent. of metallic iron.

## SOUTH WALES INSTITUTE OF ENGINEERS.

The annual general meeting of the members of this valuable and prosperous scientific institute was held in the Theatre of the Royal Institution, Swansea, on Saturday last, Mr. ALEX. BASSETT, of Cardiff (President) in the chair. There was a very large attendance of members, amongst whom were:—Messrs. Lionel Brough, Government Inspector of Mines for the Bristol and West of England district; J. E. Wales, Government Inspector for the South Wales district; Thos. Evans, Government Inspector for Derby; R. Bedlington, of Merthyr; T. Menelaus, Dowlais; F. Levick; James Nasmyth, Aberdare Ironworks; Thos. S. Hindhaugh, Newbery Collieries, near Bath; G. Birbeck, Tondu; B. Kirkhouse, Merthyr; J. Williams, Lletty Shenkin, Aberdare; E. Windsor Richards, Ebbw Vale; R. James, Ebbw Vale; Robert Jordan, Sirhowy; J. Wanklyn James, Bristol; Marcus Moxham, Swansea; Thos. Walters, Swansea; W. Fairley, Swansea; Richard Phillips, Neath; Jabez Brown, Mountain Ash; Howel Jones, Dowlais; John James, Merthyr; Henry Hewitt, Bristol; G. Martin, Dowlais; W. Child, Dowlais; W. Davies, Blangwawr Collieries, Aberdare; Christopher James, Aberdare; E. Brigden, Dowlais (secretary to the Institute); W. Adams, Ebbw Vale; J. Fox, Caerleon; P. James, Ebbw Vale; — Perkins, Swansea; and several others, whose names we could not ascertain.

The walls of the theatre were hung with diagrams, sections, &c., illustrative of the various papers read and discussed; in the body of the room were some scientific instruments, recently invented, and of great value to the engineering and scientific world. Mr. F. F. Benvenutti, of Swansea, exhibited a most ingenious yet simple instrument for at once striking an ellipsis of any size and form, and which was greatly admired. The patent for the manufacture of this instrument has been purchased by the Messrs. Rowney, of London, and when brought into practical operation will be of the very greatest value to both the engineer and the artizan. A newly invented instrument, called the Hypothonite, was also shown, the object of which is that at one set a record of both the horizontal and the vertical angle can be obtained, it being more especially adapted to underground surveys, where the strata lie at great angles. This instrument was also pronounced a very valuable one, and, with a few modifications, calculated to render material assistance to the engineer and mineral surveyor. Some building bricks, made of sand and ashes, sand and lime, and also slags from pits, were exhibited; they were apparently quite as hard as the fire-clay bricks, and as exposure to the frost and weather renders them more durable, and as they can be made at about one-fifth of the cost of common bricks, they are likely to be generally adopted when more known.

The PRESIDENT, having taken the chair, said the meeting of the council was held previous to the general meeting, when the following gentlemen were elected the officers and managers for the ensuing year:—President, Mr. T. Menelaus, of Dowlais; Vice-Presidents, Messrs. F. Levick, R. Bedlington, G. C. Greenwell, and — Richards; Council—Messrs. H. Huxham, Hosgood Parry, T. F. Brown, G. Brown, Christopher James, and J. E. Wales. These appointments having been ratified by the members, the Chairman called upon the scrutineers of the ballot papers to give the result, when the following gentlemen were declared to have been duly elected new members of the institute:—Messrs. H. D. Hoskold, mineral surveyor, Cinderford, Forest of Dean, proposed by Mr. Brough, seconded by Mr. H. Huxham; Mr. J. Waddle, engineer, Llanelly, proposed by Mr. T. Evans, seconded by Mr. Brigden; Mr. H. A. Huzzey, Uskside Ironworks, Newport, proposed by Mr. T. E. Cooke, seconded by Mr. Brigden; Mr. Thomas Graham Robinson, Ebbw Vale Ironworks, proposed by Mr. J. Cox, seconded by Mr. Phineas James; Mr. Wm. Moyle, engineer, Rhymney, proposed by Mr. Bedlington, seconded by Mr. Menelaus.

The PRESIDENT made a brief introductory address, remarking that he was happy to announce that at the council meeting, just held, it was stated that when the whole of the subscriptions for the year 1863-64 were paid up they would have a balance in hand, after payment of all their liabilities, of something like 400*l.*, so that, financially speaking, they were in a most satisfactory position. (Hear, hear.) In consequence of Mr. Brigden (who had hitherto fulfilled the duties of treasurer) having been appointed secretary in the room of Mr. Williams (who had resigned consequent upon his removal to London), the council had appointed Mr. Evans, of Cardiff, the treasurer, that gentleman having been a member of the Institute since its commencement. The accounts which were now laid on the table had been duly audited and found correct. They would now proceed with the discussion of the papers. At their last meeting a paper had been read on the "Copper Sands of Alderley," written by Mr. G. C. Greenwell. That was a most interesting paper connected with geology, and although probably of more special interest to the inhabitants of the locality to which it referred, still he thought they should be all thankful to Mr. Greenwell for his paper. The writer in his paper says:—"Anyone looking at the Share List of British dividend-paying mines, given weekly in the *Mining Journal*, will see Alderley Edge (copper), Cheshire, and in all probability anyone flying by Alderley by train, and catching a passing glimpse of the abrupt range of hill rising on the east of the railway, would, in the absence of further enquiry into the subject, most probably conclude that here was some upheaved outlier of the old metalliferous rock, in which were situated the Alderley Edge Mines referred to. A few months ago the writer of the paper, however, saw some works in progress, and found that there was a mine from which stone tinged with various beautiful shades of green, yellow, and blue were being worked, and he did not require to be told that these were the Alderley copper ores, and that instead of being in 'the most likely and proper places for finding veins in these counties, chiefly on hills that consist of limestone,' these ores were the copper sand of the new red sandstone formation. In the Alderley Edge Mines the impregnation of copper is confined to a width of from 30 to 40 ft. of three beds of sandstone, on each side of which the copper 'dies out.' The lowest of these beds is 66 ft. in thickness from floor to roof, but varies considerably; it crops out to the east in front of the counting-house of the works, and dips to the north-west (magnetic) at an angle of 12°, cross-cutting the full dip of the strata, which is about west. The present distance explored to the north-west from the outcrop is about 220 fms. * * The copper sand is a softish sandstone; where unimpregnated it is of a light colour, but when it contains copper it is blue or green in colour; in some places it contains oxide of lead, which gives it a yellow tinge; it sometimes contains oxide of cobalt, which appears in black spots and streaks, and there are here and there masses of galena in an amorphous state. The process of working is to drive down 8 ft. in width, next to the roof, and down the middle of the belt, with a height of 6 and 7 ft., and then to clear out all the ores to each side: then to take up other 6 ft. all across, and so on until all is got out. The product is then drawn up an inclined plane, by means of a steam-engine, and crushed beneath iron rollers into a coarse sand, after which it is sampled and assayed, to ascertain the strength of the solvent with which it is to be treated. It is then removed to a wooden cistern, with a false perforated bottom, and over it (the solvent) diluted muriatic acid is poured. The acid filters through the sand, and drops through the false bottom into the chamber beneath, whence it is pumped over the sand again by the same engine already referred to, which, in fact, does all the work of the place. This process is continued until the acid has taken up all the copper. The solution of muriate of copper, containing also cobalt and nickel, is then passed into another tank, and the copper precipitated in the metallic state by means of old scrap iron thrown into it. After the copper has been precipitated there remains in the last-named tank a solution of muriate of iron, together with the cobalt and nickel which the ore also contains, which are then precipitated by lime. * * There are two lodes, as they are called, in the Mottram St. Andrew Mines. The lode called the north lode runs north-west by the compass, and comes up to the surface throughout the length to which it has been found productive, which may be about 150 fms.; it is from 20 to 40 ft. thick, and dips to the north-east at an angle of about 20° downwards to the north-east from the vertical, or 70° with the horizontal line. Parallel with this lode is what is called the south lode: it lies 15 or 20 yards south of the north lode, and runs in the same direction as the north lode. This bed yields from the bulk about 2 per cent. of copper. There is also here, as at Alderley Edge, some cobalt and nickel. Some of the ore in this mine is rich, lumps having been found in the north lode containing 25 per cent. of copper, and worth 20*l.* per ton." The paper concluded with some observations as to the precise situation of the mines.

A cordial vote of thanks was accorded Mr. Greenwell for his paper.

The members then proceeded to consider the paper written by Mr. W. MATHER, on "The Machinery used in Boring Artesian Wells." The writer stated that the object of the paper was to consider the various systems of boring practised in this country, and on the Continent, in the important work of forming Artesian wells, and to see how far the recent improvements in this branch of mechanical science may be beneficial to the mining interest. After referring at considerable length to the Chinese system of boring (which appears to have dated from a very early period), and the attempts more recently made on the Continent and Germany, the writer alludes to the present plan adopted by the continental engineers, known as Kind's system, which is considered to be the perfection of boring machines. A paper read before the Institution of Civil Engineers in London, a few weeks ago, said that this machine was well worthy the best attention and adoption of English engineers. The writer had an opportunity of witnessing the operations of this machine about a year ago, near Moscow. The Government of Russia had appointed a staff of engineers to test the country around Moscow, for the purpose of obtaining coal; the best possible machinery was to be used for the purpose, and accordingly Kind's was employed. At the time of the writer's visit the depth of boring was 900 feet, and the diameter 12 inches. The strata were exceedingly easy to bore, consisting chiefly of horizontal beds of sand, clay, marl, shale, and soft limestone. An occasional thin seam of coal 1 inch thick was found, but as this locality was the extreme edge of the coal measures no practical result was obtained. The time occupied was two years, and the cost 4500*l.* The system known as Kind's is still the rod system, with certain modifications to lessen the risks and difficulties in boring to great depths. The boring tool is fastened in the usual way to the rods, which, to increase their buyancy in water, and to make them lighter, are made of wood; they are screwed together in lengths of 20 or 30 feet, and at a certain distance from the tool a "slide joint is introduced, so that when the tool strikes the rock only the weight below this joint gave any effect to the blow. Thus, a very serious difficulty is overcome, and the buckling of the rods almost entirely prevented. At the surface the rods are attached to the end of a heavy wooden beam, by means of a chain or rope; this beam is supported in the middle by a fulcrum, and the other end connected with the piston rod of an upright steam cylinder. A man works the valves of this cylinder, and to depress the end of the beam, to lift the rods at the other end, the steam is admitted to the top side of the piston. To give the blow the steam is exhausted, and the rods fall by their own weight upon the rock. At the cylinder end of the beam a counterbalance is laid on to relieve the tool of the weight of the rods above the "slide joint." This counterbalance is capable of being increased as additional rods are added, so that at any depth the force of the blow will be constant. The rods are turned by men with a cross bar, as in the old system. The percussive or striking motion is continued for eight hours, in order to pound up the debris to powder. The work is a laborious and tedious affair, and one that can never be extensively adopted in this country for mining purposes. The one great disadvantage attending it is that the boring tool remains so long at work in reducing the rock to very small particles before the pump is used to bring them up. It was owing to the imperfections of the rod system that the attention of a relative of the writer (Mr. Colin Mather) was first directed to the subject of boring, who, after much investigation and experiment, constructed and patented a machine in 1855, and which may fairly claim the name of the "English system," as the only one which has not originated amongst the continental engineers. In the boring tool and the method of giving the percussive action, and also in the shell pump, especial novelty will be found. Instead of these latter being attached to rods, as in the old system, they are suspended in turn by a flat rope about ⅛ inch thick, and 4½ inches broad, such as in common use in collieries, and the boring tool and pump are let down and drawn up as quickly as the buckets and cages in the shafts. The rope is wound upon a large drum by a steam-engine, with a reversing motion, by which one man can regulate the operation with the greatest ease. * * The general arrangement of the machine is as follows:—The winding drum is 10 ft. in diameter, and is capable of holding 3000 feet of rope, 4½ inches broad and ⅛ inch thick; from the drum the rope passes under a guide pulley, through a clam, and over the pulley, which is supported on the fork end of the piston rod, and so to the end which receives the boring head, which being hooked on and lowered to the bottom, the rope is gripped by the clam. A small jet of steam is turned on, causing the piston to rise slowly until the arm moves the clam, and gives the full charge of steam; an accelerated motion is then given to the piston, raising the boring head the required height, when the steam is shut off and the exhaust opened, thus effecting one stroke of the boring head as regular as a back pressure valve in the exhaust pipe. The exhaust port is 6 in. from the bottom of the cylinder; when the piston descends to this point it rests on a cushion of steam, which prevents any concussion. To increase the lift of the boring head, or compensate for the elasticity of the rope, which is found to be 1 inch in 100 feet, it is simply necessary to raise the clams on the clam shaft whilst the percussive motion is in operation. The clam which gripes the rope is fixed to a slide and screw, by which means the rope can be given out as required. When this operation is completed, and the strata cut up by a succession of strokes thus effected, the steam is shut off from the percussive cylinder, the rope unclamped, the winding engine put in motion, and the boring head brought up and slung from the over-head suspension bar, by a hook fitted with a roller to traverse the bar. The shell pump is then lowered, the debris pumped into it by lowering and raising the bucket about three times, which the reversing motion of the winding engine readily admits of, and then brought up to the surface and emptied by a very simple arrangement. The rapidity with which these operations may be carried on, proved by experience with the machine, is somewhat as follows:—The boring head is lowered at the rate of 500 ft. per minute. The percussive motion gives 24 blows per minute; this, continued in red sandstone and similar strata for about ten minutes, is sufficient to enable the cutters to penetrate about 6 inches, when the boring head is again wound up, at the rate of 300 ft. per minute. The shell pump is lowered and raised in the same time, but only remains down about two minutes, when it is withdrawn to empty the debris, an operation occupying about two or three minutes. After giving the results of boring by this machine, the writer concludes:—"In this rich island of ours, where a bountiful Creator seems to have concentrated so much that is good and useful, we have hitherto been able to call forth its vast mineral riches as if by the magician's wand, or, like Moses, we have but struck the rock, and the blessing has come forth. But with a constantly increasing demand no doubt our search must become more extensive, until the rich bosom of Mother Earth shall yield her riches from a thousand places yet untried. We know how little still the science of geology directs with certainty the operations of the miner. In fact, one great lesson it teaches must always make the operations of the miner somewhat experimental—that is, that in the midst of ordinary formations disorder constantly mingles; disruptions and dislocations constantly meet our view on every hand, oft setting at naught our best calculations. In Wales, Nature's bountiful hand has been lavish; there appears no limit to mineral wealth—copper, lead, iron, coal, and even gold, are deposited, as if to supply a continent. Therefore, all mechanical appliances which aid man in obtaining and preparing these valuable gifts for the use of the world must certainly be interesting to those who have intelligence to guide and control all operations connected therewith."

In reply to a question put by Mr. LIONEL BROUGH, the PRESIDENT stated that the machine described by Mr. Mather had been tried in this district. At the last meeting of the Institution a discussion was invited upon this paper, and it was discussed for a short time. He had just arranged that a machine should be sent down there for trial, and he hoped it would be there in the course of ten days or a fortnight. He would take care that a very careful record should be kept of the amount of work done, and it should be laid before the next meeting of the Institute. (Hear, hear.)

No discussion took place upon this paper, the members awaiting the practical results, as promised by the President.

## ON UTILISING PIT TIPS.

By Mr. W. B. MONKS.

The SECRETARY next read the paper on this subject. The writer stated that in consequence of the great difficulty in getting surface land for the collieries, a paper upon the subject of utilising the pit tips must be exceedingly interesting and valuable. One of the chief difficulties which colliery proprietors had to contend with was the small quantity of land at their disposal for the purpose of their tips. Various plans had been tried for utilising these pit tips, but the cost was such as to prevent any practical results being obtained. The only plan which promised success and to come into general use was the making of bricks from these tips. Experiments with this object in view have been tried, and so far as they had gone had proved successful, that was to say wherever the quantity of small coal was not in such large quantities as to burn or consume the mixture entirely. The plan adopted was first to bruise, or better to grind the tips into powder, the degree of fineness to which the material was ground having a great influence upon the bricks made therefrom. The great bulk of the building bricks of the present day were made precisely as they were thousands of years ago; that is—the clay is dug in the winter, and exposed to the action of the frost and snow until almost pulverised, then by the admixture of water it was reduced to a sort of mud by manual labour. It was then made up into blocks and laid on the ground until hardened, when they were placed in the kiln. Machinery had now been erected for making bricks from pit tips, and it was found that they could be manufactured at a price very much lower than now charged for the common bricks, whilst the pit tip bricks were unquestionably much harder, and also possessed another great advantage—that they became dry in a very short time, so that the builder could plaster the walls almost immediately. The paper concluded by remarking that there was every reason to believe that the pit tips which had always been a source of considerable difficulty and inconvenience to colliery proprietors would now be shortly utilised, and that with very great advantage.

The PRESIDENT said it was always usual to postpone any discussion on papers read until the next meeting, so that they should be printed and laid before the members, who would then have the opportunity of considering the various arguments therein. The paper which had just been read was a very useful one. He (the President) had seen the machine referred to, and was certainly surprised at the exceedingly good work which it performed, and the rapidity with which it did it. However, perhaps, it was better not to anticipate any discussion, but to postpone it until the next meeting. He would now simply move a cordial vote of thanks to Mr. Monks for his useful paper.

Mr. BROGDEN formally seconded the resolution, which was then put to the meeting, and carried unanimously.

## NATURE AND MANUFACTURE OF PATENT STONE BRICKS.

By Capt. J. J. BODMER.

The writer, after giving a succinct and interesting history of the making of bricks from the very earliest period, and the introduction of bricks into this country at the time of the Romans, described the process adopted by Messrs. Bodmer Brothers, Newport, in the manufacture of the patent stone bricks. The general cry was for a good yet cheap brick, but those of really good quality could only be had by paying a very high price for them. When they considered that labour was now about 100 per cent. higher than it was about 80 years since, anything which tended to lower the price of so useful and general a commodity as bricks must be considered a timely invention. The stone bricks which he (the writer) then had the pleasure of bringing before them had fulfilled these requisites. Another very great advantage which these stone bricks had over the common ones was that they improved by age, whereas the common bricks skinned and deteriorated. Some of the bricks were then exhibited to the members; some had been made of Aberthawe lime and sand, others of sand and cinders, others of broken bricks and lime, and some others had been made out of slags, which were particularly hard and durable. Some of the bricks made by the patent process were stated to have borne a weight of 3 tons per brick after having been made but 14 days, others which had been longer made were capable of bearing about 30 tons per brick. The chief difficulty in the manufacture was that of reducing the material employed to the fineness of sand, or better to that of powder. We understood the writer to state that the patent stone bricks could be manufactured and sold at 12*s.* per 1000. Several places were instanced where these bricks had been used, and they were stated to have answered every expectation.

The PRESIDENT said the paper which had just been read was a very interesting one, and for which they ought to be very much obliged to Capt. Bodmer, and also for forwarding the samples then upon the table. He had used the sand-made bricks himself, but could not speak as to their durability, because he had only recently tried them. He believed that if these bricks were not used too soon after being made they were exceedingly good, and must prove a most useful article to builders. Of course, if any gentleman present had used any of the bricks they should be very glad to hear any observations, if not the discussion on the paper had better be postponed until after it had been printed. He would now move a vote of thanks to Captain Bodmer for his able and interesting paper.

Mr. ADAMS had great pleasure in seconding the resolution.—A MEMBER suggested that the manufacturer should keep these bricks in stock, and not send them out until properly seasoned.

Mr. COX thought that the manufacturer of these stone bricks had struck upon the right principle and the right ingredients. He had lately seen a building in Lyme, Dorsetshire, which had been built of Aberthawe lime and sand. The building was very much exposed to the action of the sun and the weather generally, and whilst the bricks were eaten through to the depth of 2 in., the mortar stood out quite firm and solid. The morter was composed of the same materials as these patent stone bricks were made of, and he, therefore, believed they would be found to answer every purpose, and also to harden the longer they were exposed to atmospheric influence.—The resolution awarding the vote of thanks to Capt. Bodmer was then carried unanimously.

## PORT OF CARDIFF, AND THE ABERDARE COAL FIELDS.

By Mr. ALEXANDER BASSETT, F.R.S.

Mr. ADAMS having temporarily occupied the chair, the PRESIDENT (Mr. Bassett) read his paper upon the above subject. The early history of Cardiff was treated upon in a most able and interesting manner, exhibiting much research and intimate knowledge with early history. In ancient time Cardiff was a place of considerable strength, protected by deep moats, and approached by four gates. Up to the time immediately preceding the opening of the Glamorganshire Canal there were only a few streets in the town, and the tide swept over a great portion of the area south of the present Custom House. This state of things continued until about the year 1793, when the sea banks were constructed, and where now upwards of 2000 houses had been built, and extensive docks, railways, &c., formed. At the date now spoken of (1793) the number of letters was very limited, being delivered by an old woman, which delivery occupied two or three hours a day, and for which the old lady was paid 3*s.* 6*d.* per week. The number of letters was now about 14,000 per day, which was a pretty good indication of the amount of business done there. In 1793 the people of Cardiff were supplied with coals brought by mules in sacks, and which were sold at 10*d.* per sack. The construction of the canal between Cardiff and Merthyr soon made a very material alteration. The Act for the construction of this canal was obtained in the year 1790—the canal being 25 miles long, and having 40 locks, the water being 568 feet in Merthyr higher than the sea lock in Cardiff. The canal had been very successful, paying very large dividends to the shareholders, and returning a large percentage to the freighters. Up to the year 1830 the trade of Cardiff was still carried on only by means of this canal, and this caused great inconvenience. The late Marquis of Bute perceived that if proper accommodation was given to Cardiff the town would become the main outlet and the principal port of the mineral basin. His lordship succeeded in obtaining an Act of Parliament in 1830 for the construction of the West Bute Dock. In 1833 the first steam communication between Cardiff and Bristol was effected, but vessels were unable to make a trip during one tide. They had to anchor off the Holmes until the tide served for them to proceed on another journey. The dock scheme having been accepted, a railway was at once suggested to effect a rapid and direct communication with the whole district. An Act for the construction of the Taff Vale Railway was obtained in 1836, and that railway, although it had difficulties of more than ordinary nature to contend with at the commencement, was now one of the most skilfully conducted and successful in England. Although the traffic over it is of a very heavy and severe character, the condition of the permanent way is second to none in the United Kingdom. The West Bute Dock was opened in 1839, and the railway as far as Navigation in the year 1840. At this time the winning of the Aberdare steam coal by pits had just taken place, and favourable reports had been received from London as to the sales which could be effected. The Marquis of Bute died in 1848, leaving the management of his property to trustees

to whom the inhabitants of Cardiff were much indebted for the improvements they had effected. Altogether in connection with the West Dock there were about 49 coal shipping staiths, each of which was capable of shipping no less than 400 tons in 10 consecutive hours. The railway communication from Navigation to the Aberdare district was made with the Taff Vale Railway. In the year 1855 the want of increased accommodation in Cardiff being felt by the freighters, a company was formed for the purpose of constructing a tidal harbour at Penarth upon the River Ely, including a line of railway to connect the proposed railway with the Taff Vale Railway. The Act for the construction of the tidal harbour was obtained in the year 1856. In 1857 the Penarth Company, finding the trade increasing far more rapidly than was anticipated, obtained parliamentary power to construct a line in connection with the railway and tidal harbour with all conveniences for shipping. These works will probably be completed early in the next year. The quantity of coal shipped at Cardiff and its creeks during the last year amounted to 2,362,948 tons. No less than 12,337 vessels visited the port.

In the year 1627 the population of Aberdare Valley, extending from Mountain Ash to Hirwain, did not exceed about 3000; those who lived between Aberdare and Navigation were dependent upon agricultural labour for support. Those who lived near Hirwain were for the most part employed in the ironworks. At Rhydygroes, which is situated at the top of the Vale of Neath, in the parish of Ystradfodwg, a stone or smokeless coal was worked by levels. This coal was used exclusively for malting purposes, and maltsters living in the valley of Glamorgan obtained their supply from these levels, and the coal was conveyed in bags on ponies to Llantrissant for their use, a distance of about 40 miles, over a hilly country and on bad roads. The cost of this coal at Llantrissant was 2s. per cwt., or 2l. per ton. After the formation of the Neath Canal Capt. Evans, of Aberthaw, traded between that place and Neath, and that smokeless coal was delivered at Aberdare at 18s. per ton, the cost of land carriage to Llantrissant being 10s., making a total cost of 28s. per ton. Capt. Evans found he could command a large sale for his coal at Cardiff, for he was enabled to deliver it on the wharfs at 17s. per ton; the cost of hauling to Llantrissant being 9s., made a total cost of 26s. Since the South Wales Railway has been opened this same coal has been delivered in the town at 15s. and 16s. per ton.

The first pit in the Aberdare district was sunk by the Messrs. Wayne, in 1827, and the four-foot Aberdare seam of coal was now at a depth of 24 yards from the surface. In 1834 Messrs. Wayne commenced negociations for working the minerals on property belonging to Messrs. William and Thomas David, situated on the side of the Aberdare Canal, called Abernantgroes. Shortly afterwards Mr. Wood, of London, visited Aberdare, and ultimately purchased from Messrs. Wayne 40,000 tons, but with the clear understanding that no more than two boats a day, or 44 tons, should be sent to Cardiff, as that coal being now in the market there was great difficulty in introducing more than a very limited quantity. A contract was taken at 7s. 4d. per ton at Cardiff, but experience soon proved that the coals could not be delivered at that price, and ultimately a new arrangement was entered into, and a contract was completed, after which Messrs. Wayne had no difficulty in disposing of as much coal as they could raise. Immediately after the success of Messrs. Wayne's enterprise was known, the late Mr. Thos. Powell carefully examined the Aberdare district, and secured at once very valuable properties immediately to the deep of Messrs. Wayne's taking. The Aberdare Valley, which only a few years since was an agricultural district, its population in 1827 not being more than about 3000, is now the great steam coal producing district of South Wales. We find that in this valley in 1863 no less than 2,538,031 tons were raised, out of which 244,694 tons were consumed in the ironworks of the immediate neighbourhood, comprising 11 blast furnaces, 107 puddling furnaces, and eight rolling-mills, and in this locality there are 71 levels and pits. In connection with the coal works only, no less than 9030 men and boys descend every day to work. No less than 680 horses are employed to convey the coal from the various works to the bottom of the pit. The extent of the iron roads over which the trains run are considerable, and I estimate that there are no less than 194 miles of underground railway and tramways now in actual use in the coal mines in this valley. The following table will show the quantity of coal raised in the Aberdare Valley for the last ten years:—1854, 1,015,719 tons; 1855, 1,210,820; 1856, 1,456,029; 1857, 1,460,194; 1858, 1,427,702; 1859, 1,655,633; 1860, 1,789,671; 1861, 1,939,872; 1862, 2,603,703; and 1863, 2,538,071 tons.

In the counties of Glamorgan and Monmouth there exist no less than 413,440 acres of mineral property, from which were extracted last year 9,951,081 tons of coal, or about 1-9th of the entire yield of Great Britain.

Mr. Adams said that it would be better to postpone any remarks upon the paper just read by the President until the next meeting, when it should have been printed. It was a most interesting and instructive paper, and the best thanks of the Institute were due to Mr. Bassett for it.—Mr. Steele seconded the vote of thanks to the President for his paper, and the resolution was then carried *nem con.*

The Chairman said he had just received a letter from Mr. Mather, who regretted he could not attend their present meeting. He added that they had just completed the sinking of a well, 520 ft. deep, by means of the machinery before described.

Mr. Lionel Brough wished to call the attention of the members of the Institute to the hypo-thonite. He thought the object aimed at by this ingenious instrument was decidedly a good one, because at one set they could record both the vertical and horizontal angle and the number of links required. He had asked several scientific gentlemen to most minutely examine the instrument, and they were of opinion that with a few slight modifications it would become most useful for the purpose intended, and would render very great and essential service to engineers and mineral surveyors.

## UTILISATION OF SLAG FROM BLAST FURNACES.

By Mr. G. Parry.

This was a short but interesting paper, in which the writer referred to the fact that in many places vegetable matter seemed to luxuriate in the neighbourhood of blast furnaces, and in one instance he had noticed that where formerly there was a vast slag heap it had now become covered with trees, which if allowed to remain for another century would become a vast forest. These slag heaps had been proved to be a most valuable mineral manure, and it was for this purpose the writer advocated their utilisation.

The President said that this paper may be regarded by some as an agricultural paper, but the object of the writer was to call the attention of the ironmasters to the subject. They would all agree that if they could get rid of these slag heaps it would be a most desirable thing, especially if proved to be a valuable mineral manure. He would move a vote of thanks to Mr. Parry for his paper, and that it should be printed in the Transactions of the Institute.

Mr. Lionel Brough said that at the British Association for the Advancement of Science meeting, recently held in Bath, Mr. Parry had asked him to bring this paper forward, but not being much acquainted with agriculture he (Mr. Brough) had strung together some few observations upon the paper, and handed them over to a Professor much more competent to dilate upon the subject. That gentleman had introduced the matter to his brother professors very ably, and followed it up with a discussion which was largely entered into by those present, and the general opinion was that something was very likely to come of it. There were some persons present who thought that certain objections which they raised would be fatal to it, whilst there were others whose opinions were entitled to quite as much weight thought otherwise, and considered that by-and-bye, instead of these cinders and slags blotting the landscapes, they would be converted into valuable manure, which spread upon the land would vastly improve it. The discussion which took place upon this subject at the Bath meeting was not unpromising, and he hoped that by-and-bye some practical results would be obtained.

The President said that the paper promised by Mr. T. Forester Brown on the Caerphilly Mineral District was not ready, Mr. Brown having lately been too much engaged to devote the necessary time to the subject.

This concluded the business of the Council, and the members then proceeded to the steam saw-mills of Mr. Marcus Moxham, where Mr. Huxham had kindly erected one of Messrs. Jones and Levick's coal-cutting machines. The machine was put at work upon a huge block of freestone, and from the steady and regular work which it performed, we can no longer doubt but that ere long machinery will soon be brought into practical operation in the cutting of coal, and thus much of the labourious and dangerous manual work dispensed with.

The members afterwards dined together at the Mackworth Arms Hotel, presided over by Mr. Bassett, the President, the vice-chairman being Mr. E. Brigden, the secretary. There were about 60 gentlemen present. After the dinner the Chairman rapidly proposed the usual loyal and complimentary toasts, which were received and responded to.

The Chairman then gave "the Coal and Iron Trades of South Wales." (Cheers.) They all knew the vast importance of these trades to the district—in fact, everything depended upon the state of these two staple trades. In proposing success to them he would couple therewith the names of Mr. Brogden and Mr. Levick.

Mr. Levick said he had but little direct interest in the coal trade, and therefore he should leave some other gentleman to respond to it. On the part of the iron trade of South Wales he was very much obliged to them for the honour done in drinking success to the trade. He was in hopes that the iron trade would continue to prosper, for it was on that trade, in conjunction with the coal trade, that the prosperity of the whole of South Wales mainly depended.

Mr. Brogden responded on behalf of the coal trade. The papers which had been read at their meeting that day would doubtless be productive of great benefit, and although one paper was considered an agricultural paper, still agriculture was more intimately connected with the mining interests than some seemed to imagine. The utilisation of pit tips was a very interesting and important subject, and if these tips could be utilised and made a valuable manure, their interest would become more united than ever. He thought all the various interests were pulling together, and by meeting together and benefitting themselves by the discussion of questions affecting their interests, they did good to their fellow-creatures generally.

The Chairman then proposed the town and trade of Swansea. He was exceedingly glad to find that the town and port of Swansea were increasing most rapidly. The narrow gauge system of railway was of immense advantage to the Port, and he had done all he could to assist in its being brought in connection with the port, much against the wish of certain gentlemen who had no desire to see it brought down. It was now quite clear that the introduction of the narrow gauge had been of the greatest advantage to the town and port of Swansea, and he very much regretted that the Great Western Railway Company had not seen it their interests as well as their duty to lay down the third or narrow guage rail between that port and the port of Swansea. If they had not enough capital to lay down such a rail, there were highly responsible parties quite prepared to do so, and if such offer was not accepted he did not think that a much greater calamity could befal the whole commercial community of the district. They had now the narrow gauge railway running in direct communication with the whole of the North of England; but perhaps they would be surprised when he told them that the time occupied in taking iron from the South Wales district into Staffordshire was something like a month. That would appear in these days almost incredible, but it was a fact, but he hoped the time was not far distant when they would be able to get there direct by means of the narrow guage line. He would now give them the town and trade of Swansea, and would couple therewith the name of Mr. Thomas Glasbrook. (Cheers.)

Mr. Glasbrook, as a member of the Town Council, had much pleasure in returning thanks for the honour which had been done the town and trade of Swansea. The docks and railways which had recently been brought into operation would be but of little use were it not for the scientific gentlemen and the large capitalists, such as those now around that table. He hoped they in Swansea would be shortly able to give them more shipping accommodation. The laying down of the third rail over the South Wales line was very important, and when that should have been completed, and when they had coal drops in sufficient number, he hoped they would be able to produce a paper in reference to Swansea similar to that which the Chairman had read with reference to the port of Cardiff. He hoped that Swansea would not be second to Cardiff much longer. (Hear, hear.) They in Swansea had done a great deal up to the present time; they had expended on the harbour within the last 30 years about half a million of money, and they were now about to spend about 30,000*l.* more to deepen the entrance channel, and then, with deep water, and their more favoured westward position, they hoped to be able to compete favourably with the port of Cardiff. (Hear, hear.)

The Chairman next proposed the health of the Government Inspectors, remarking that he sincerely and honestly believed they did their duty, and in a manner which secured for them the respect and esteem of all.—The toast was drunk with enthusiasm, after which Mr. Brough, of the Bristol and West of England district, replied, observing that the inspectors were all united in doing all the good they could to advance the happiness, comfort, and safety of the colliers, and at the same time they were anxious to forward the interests of the employers and proprietors. He believed that those amongst whom they lived would give them credit for doing their duty to the best of their ability. (Cheers.) He could say on his own behalf, and that of his colleagues, that they endeavoured to discharge their duties faithfully and conscientiously, and that in a manner which should conduce to the happiness, comfort, and safety of the colliers, and the interests of the proprietors. He thanked the President and every gentleman present for the honour they had done him and his colleagues in thus drinking their healths. Before he sat down he had a most pleasant duty to perform—to propose the health of their President, a gentleman who was universally esteemed and respected, and who had discharged the duties of President of their really useful and, he was happy to say, prosperous Institution, in the most satisfactory manner. (Hear, hear.) He (Mr. Brough) had no hesitation in saying that the Institution had worked a great deal of good in South Wales, and he believed that it would still achieve more good, and bestow far more benefits than it had hitherto done. All the objects and intentions of the Institution had been carried out by Mr. Bassett to the fullest extent during the past year, and, therefore, in wishing him farewell as their President, he said that they were sorry to part with him, but they had this pleasing recollection, that they still retained him as an associate. (Hear, hear.) He would now propose the health and prosperity of their much respected President. (Cheers.)—The toast was drunk with musical honours.

The President, in responding, said he felt that Mr. Brough had said a great deal of him which he did not deserve; but this he could say, that he had taken a great deal of interest in the welfare of the Institution for several years past, and if he had in the slightest degree promoted its interest, he was most amply repaid and satisfied. During his presidential year he had received the greatest kindness, not only from the officers, but from every individual member, and he felt sure that kindness would be extended to his successor. (Hear, hear.) He would now propose to them a toast, which he felt sure would receive their heartiest approval—he gave them "Success to the South Wales Institute of Engineers, and the health of Mr. Menelaus, their next President." (Cheers.) He could not help saying that they were fortunate in getting Mr. Menelaus to undertake the duties of the office, and he hoped that they should not only secure his cordial co-operation and assistance during the ensuing year, but as long as he lived. (Cheers.)

The toast having been most enthusiastically drunk, the President elect, on taking the chair, responded to the toast. He thanked them all for the very handsome and cordial reception they had given the toast. When they heard during the morning that they had nearly 400*l.* in the bank, he thought they would agree with him when he said that they were getting on pretty well. (Hear, hear.) He felt obliged to them for having for a second time elected him their President, although he should have been glad to have seen a younger man nominated. He could hardly promise them the same amount of zeal as he had exhibited when he took the office some years ago, nor the same amount as had characterised the labours of their President during the past year, but he would honestly do what he could. He had the welfare of their Institution much at heart, and he would do everything in his power to forward its interests. (Cheers.)

The health of the vice-chairman and their secretary (Mr. Brigden) was then proposed, and appropriately acknowledged by that gentleman.

A cordial vote of thanks was proposed to the Council of the Royal Institution for the use of the room, which was acknowledged by Mr. John Lewis, as one of the council.—The "Press" was responded to by Messrs. W. Williams, formerly of the *Silurian*, and J. H. Jenkins, of the *Cambrian*. This closed the proceedings.

## REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Oct. 27.—The Iron Trade is as it has been for the last few weeks. The present pressure in the monetary world checks orders, but for plates and sheets, and some other sorts, the orders which accumulated in the early part of the colliers' strike suffice to keep the works well employed. The general aspect of the trade tends to the expectation of a quiet demand for iron until next spring. The American orders are at a very low point, and have been for the last three months; but this is a ground for concluding that their stocks are low, and that they must soon be coming into the market. France is taking little English iron, and generally the foreign demand is small. Pig-iron continues dull, and few sales are effected. Best native brands are quoted 3*l.* 10s. to 3*l.* 15s.; hematites, 3*l.* 10s.; but it is probable that a large purchaser could get a discount from these quotations, except for the very best makes.

The Strike is not over, and it is hardly safe to offer an opinion on its prospects; but it appears as if the "spirit" of last week, which restored its vigour for a few days, is now spent. In the Bilston district the men are at work, and at one colliery so strong is the feeling against those who induced them to go out for a week or a fortnight, that a sort of combination has been effected to drive them from the mines; and the proprietor has had to exert his influence for the protection of those who headed the movement. In the Dudley district the men are dribbling in, and the morning meetings have, with some few exceptions, been prevented.

There was a very large meeting at Tipton, on Monday, to protest against the police interfering with those who were making a procession to the collieries early in the morning with whistles and drums, the number present being variously stated at 40,000, 15,000, and 8000 persons. They consisted of ironworkers and other trades, as well as puddlers. On the same day, however, a proposition at a meeting at West Bromwich, that where the masters would give the full wages the men should be allowed to go in, was received with loud applause, and was yielded to by the leader, Mr. Thomas Griffiths, who, however, clogged it with the condition that any master desiring his men to go in on those terms must send to a committee of the leaders of the strike for their permission, without which no one was to go in. It is hardly likely that any master will do this, and it has been announced that as yet the concession has produced no result. At a small meeting at Dudley, yesterday, this step on the part of the West Bromwich men was viewed with dissatisfaction, and it was observed that the men from the district were not at the meeting. The Chairman observed, "some people had said that the strike was productive of no good. He thought they had led the masters such a dance this time that they would be cautious how they gave the men notice of a reduction another time. (Hear, hear.) If the strike was of no other good, this was worth all the sufferings and trials they had gone, and were still prepared to go, through." The speaker advised the men not to divide themselves, some go to work and some stop away. "If they were to go to work, let them go altogether; if not, let all stop away." (Hear, hear.) Another speaker said all should play together, or all go in together; and this was echoed by a general expression of approval. These expressions indicate that the men are contemplating the necessity of yielding.

As illustrations of the actual amount of wages colliers receive, it may be stated that in a pit near Bilston a new measure is ready for working, and the chartermaster was endeavouring to arrange the "stents," or "day's work," with the men. He offered to work for four hours, and to measure what he did, and call that a "day's work," but the men refused, and wanted the day's stent to be as much as he could do in three hours, to which he refused to yield, and they left work. A master says that a number of his miners in the thin coal district, working from Wednesday morning to Saturday night, earned 35s. each at the reduced prices, and in the thick coal districts the wages are higher.

## REPORT from DERBYSHIRE, YORKSHIRE, and LANCASHIRE.

Oct. 27.—The Iron Trade is unusually quiet at present, but the reports from the different districts give indication of a healthy and satisfactory future. The position of the money market puts a great check upon all speculative purchases, and induces merchants to order for immediate requirements only. The obligations of the quarter-day have been satisfactorily met. There has been a slight decline in the price of pig-iron this week in the Middlesbro' district. Derbyshire pig-iron is firm, and the demand increasing. The Coal Trade is in a very active state, and the demand is daily increasing. The Staffordshire strike has brought many buyers into those counties, on account of the falling off in the home supply, but the orders in hand at most of the collieries are such that little stock can be spared for the foreign trade. Some of the colliers in South Staffordshire have returned to work, others who remain out are in receipt of 9s. per week. The aid of the military has been sought, and the whole district is in a state of great excitement. Happily, in these counties, there is no such battle between capital and labour as that now agitating South Staffordshire. There is great activity in the Steel Trade, and those firms engaged in the make of heavy castings are also exceedingly busy. In locomotives and all descriptions of machinery there is much doing. Time only further illustrates the utter recklessness which has characterised the management of affairs at the Leeds Bank. In addition to those firms which have gone down, several others are talked of, and the shock which has been produced in the neighbourhood of Leeds has been very great.

The Admiralty are again ordering largely of armour-plates, and those firms engaged in their manufacture show no diminution of activity. The Sheffield firms have maintained their high position with regard to quality at the recent tests. The progress in Sheffield manufactures has been great of late years. The town has a first-class reputation for railway-springs, armour-plates, and more recently for the make of heavy castings, the Midland Works having recently turned out one of immense size. It is intended to erect two more stacks at the Sheepbridge Ironworks, and a company is now being formed in the neighbourhood of Derby for the purpose of erecting a large forge, mills, &c. Several new collieries are being formed, with large plant, and the coming year will afford undoubted evidence of the development of the Derbyshire coal fields.

The progress of the sinking at Cobuar Wood Colliery, belonging to the Chesterfield and Midland Company, having frequently been noticed in the Journal, it will be a matter of interest to announce that the black shale, or silkstone coal, was won last week. The coal is of an excellent quality, and of the following section—Coal, 2 ft. 4 in.; holing dirt, 8 in.; coal, 2 ft. 2 in. The sinking was commenced in the early part of 1862, but has been much hindered by large quantities of water flowing into the shaft from the hard rock overlying the black shale coal in that neighbourhood. Mr. E. Holley, mining engineer, of Derby, has advised the company during the present year, and we congratulate him and the directors of the company on the successful issue of their perseverance.

The applications for Letters Patent include—Mr. G. E. Donisthorpe, of Leeds, for improvements in getting coal and other minerals;—and for improvements in obtaining grease from wash waters; Mr. J. G. Jones, of Blaina Ironworks, for improvements in machinery employed in getting coal, stone, and other minerals; Mr. E. Hornsby, of Scarisbrick, of Prescot, for improvements in apparatus for signalling on railway trains; Mr. H. Bird, of Wakefield, for improved methods of and apparatus for stopping locomotive steam-engines and railway carriages, by the application of steam-power to the working and management of railway brakes.

## REPORT FROM NORTHUMBERLAND AND DURHAM.

Oct. 27.—The Coal Trade continues good, with an excellent prospect for the ensuing winter. The Iron Trade has experienced a lull, the demand having suddenly fallen off to a considerable extent; whether this will be merely temporary, or lead to a decline, appears to be uncertain, but most probably it will be only temporary, caused, no doubt, by the panic which has lately shaken the Money Market. At present many of the makers of pig-iron are increasing their stocks, but as the stocks in hand are not large—until lately, indeed, no stocks of the slightest consequence were held in the district—this can excite no alarm.

A very severe storm visited the north-east coast on Saturday and Sunday last, the effects of which were severely felt, but the great improvements at the mouth of the Tyne have had the effect of converting that river into a harbour of refuge, so that ships can run in at all times. There can be little doubt that the effects of the late gale would have been most disastrous, had those improvements not been effected. But as it was, much damage was done and some lives were lost, a Danish vessel having gone down, with all hands, on the north coast of Northumberland; a schooner was also wrecked at the mouth of the Tyne, but the hands were saved; and many vessels sustained damage to their spars, sails, &c. It is most remarkable that a fleet of 50 laden vessels left the Tyne on Friday, in the face of the warnings of Admiral Fitzroy, and the certain indications of the barometer here. The barometer, previous to the late storm, had been very steady and high for a long period, but towards the end of last week it fell rapidly, as the register given below will show. (This is taken from the register of an underground barometer, placed 200 feet below the sea level):—

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| Saturday, October 15 | Inches 30·32 | | Wednesday, October 19 | Inches 29·65 |
| Sunday, " 16 | 29·94 | | Thursday, " 20 | 28·93 |
| Monday, " 17 | 29·62 | | Friday, " 21 | 29·70 |
| Tuesday, " 18 | 29·56 | | Saturday, " 22 | 29·66 |

It will be seen that the fall from Saturday, the 15th, to Thursday, the 20th, was no less than 1·39 inches; surely sufficiently alarming to enforce caution; the gale had, indeed, actually commenced when the fleet alluded to went to sea. The sudden rise from Thursday morning at 5 A.M. to Friday morning at the same time of ·77 was merely caused by the change of the wind to the north-east. This is often observed on this coast, and heavy winds and rain occur with a rising barometer and the wind easterly.

An unfortunate accident occurred at the Jane Pit of the Eppleton Colliery, on Monday last. One of the shifts of men, numbering 30 hewers, went down the pit, and, as usual, were being conveyed to their work by the tram of tubs down the engine plane, which is a very lengthy one, being about 3000 yards in length. By some accident the guide to the brake had got displaced, and the latter, consequently, was unshipped also, and the whole tram of tubs ran at great speed down the slope. Several of the men leaped out, and the tram was brought to a standstill by the tubs leaving the rails. One man was so much injured that his death ensued shortly afterwards, and several others were more or less bruised. It appears that it was contrary to orders for the men to ride on the tubs in this bank, but they availed themselves of this means in order to get sooner to their work.

On Tuesday, three men were summoned before the county magistrates at Gateshead, to answer the charge of absenting themselves from their employment. The men were bound at the Washington Colliery for one year, but refused to work, alleging as their reason that the pit was unsafe. On the part of the proprietors, witnesses were called to prove that the ventilation was perfect, and that there were 120,000 cubic feet of air passing along the mine per minute, and 10,000 cubic feet passing along the East Maudlin seam. In reply to these, one of the defendants stated that about a fortnight ago, when a shot was lighted, the gas fired, and came 9 yards back, and another place was standing full of gas. Ultimately the defendants agreed to return to their work. One of the men, who was charged with the same offence, stated that he had left because he had been put into the "cable" for another man, who had run away, and not into the seam to which he was bound. The viewer stated that the men were not bound to any particular seam, but were bound to the colliery generally. The defendant said he expected when he signed the bond that he was signing for the Hutton seam, as that was the seam to which he had been bound before, and that he could not obtain a living at the work to which they had put him. He agreed to go back and work his time out, but probably he would be punished more than if he went to prison. Mr. Smith said that he would look into the matter, and see and arrange any difference that might exist.

Messrs. Murray and Co., of Chester-le-Street, have recently completed a good winding-engine, of 100 nominal horse-power, for the Shamrock and Hibernia Collieries, at Gelsenkirchen, in Westphalia. The engine, which is on the double lever principle, and is the first of that construction employed on the continental coal fields, was started on Oct. 18, by Mr. Wm. Coulson, and is the thirtieth manufactured by the same firm which he has set to work. The progress of these now famous engine works, says the *Durham Advertiser*, exhibits the success which invariably attends ability and perseverence. The founders of the present firm were Messrs. William and Thomas Murray, who originally carried on the business of millwrights. About thirty years ago their attention was directed to the demand for steam-engines, which were being adopted in place of natural agencies hitherto at work. Mr. Thomas Murray proceeded to the South of England, and by that almost intuitive knowledge of engineering, which was so characteristic of him, the firm commenced the erection of small engines of from 2 to 10-horse power, some of which were applied to small tanneries in the neighbourhood. New and extensive ranges of buildings were shortly erected, and engines of much greater power were constructed. The well-known business habits of Mr. Thomas Murray soon earned for the establishment a good name, and the collieries in the northern counties generally were supplied by the firm. But the demand was not limited to the adjacent counties, as the fame of the works spread, and splendid engines have been sent to various parts of England, Scotland, Wales, Hamburg, Hanover, Austria, and Prussia. In this neighbourhood the firm furnished the large pumping-engine, of 300-horse power, called the Lambton engine, which has been for several years in use. The largest engines in the coal trade, erected at Rayhope, three in number, of 260-horse power respectively, were also made at these works. At the present time there are, in course of completion, two engines of 200-horse power each, intended for blast-furnaces at Eston, in Yorkshire. A large engine is also being made by the firm for rolling-mills at West Hartlepool. When the present orders are executed, the firm will have built no less than 360 engines. Upon the death of his father, the management was undertaken by Mr. Thomas Murray, now the head of the firm, and the present activity displayed in every department of the works, and the demand for engines, which are not able to be accomplished within the specified time, evidence the best proof of this gentleman's ability. Cut off from railway communications, and having to compete with other firms with readier access and egress, the present prosperous condition of the works is the best testimony as to the ability with which they are conducted.

## REPORT FROM MONMOUTH AND SOUTH WALES.

Oct. 27.—The future of the Iron Trade is not looked forward to with quite so much confidence as was the case a few weeks ago, and there is already evidence of a slight check in the demand. This arises from two or three causes, which may be briefly enumerated. First, the fact that there are many furnaces out of blast in Staffordshire which ought to send a large number of orders to other districts—larger, in fact, than could be produced under ordinary circumstances. No doubt a better enquiry has been experienced since the commencement of the turn-out, but it cannot be said that the Welsh makers have been unable to comply with the demands made upon them. Secondly, the shipments to New York have decreased, and there is no likelihood of a revival of the trade with the States so long as money matters in that country are in such an unsettled state. Thirdly, the depression which prevails in financial circles in this country has some effect on the demand, but this will only be temporary, as the high rate of discount will, it is pretty clear, attract a large amount of gold to the Bank of England. Taking all these circumstances into consideration, it is evident that when once the Staffordshire strike is at an end the demand must increase considerably, or else the current prices will with difficulty be maintained, and very probably a slight reduction will have to be submitted to. At present there is no lack of orders, and all the works in this district are on full time. Bars are quoted 7*l.* to 7*l.* 10s. at the works, and other descriptions in proportion. Briskness continues to characterise the Steam Coal Trade, and there is a large business doing. House qualities are in demand, and coke commands an average sale. In Tin-plates there is no change to report; and, while some makers have a fair number of orders on their books, others are unable to dispose of the whole of their make. The Patent Fuel Works are in active employ.

The colliers are still out at Messrs. Bevan and Co.'s Tillery Pit. It appears the original cause of the dispute was that a loaded train was sent up by the hitcher against a descending carriage with eight men in it, which is contrary to the rules. The men in consequence of this irregularity turned out, and the dispute was referred to Mr. Brough, the Government Inspector. The latter gentleman advised that both the hitcher and banksman should be discharged, and the recommendation was carried out by Mr. Steele, the manager. The latter, however, refused to allow several of the old hands to resume work, and all the others then refused to go in. Eight of the men were brought before the Tredegar magistrates on Friday, charged with leaving their work without having given the requisite notice. Mr. Colborne appeared in support of the information, and Mr. Plews for the defendants. Mr. Plews applied for an adjournment, in order to summon Mr. Brough, the Government Inspector, as witness for the defendants. After some discussion it was decided to adjourn the case until Friday (to-morrow), when it will be heard before the magistrates sitting at Blackwood.

Mr. Charles Little, one of the agents at the Briton Ferry Ironworks, was presented by the workmen, on Saturday, with a gold watch and chain, bearing the following inscription:—"Presented to Mr. Charles Little by the workmen at the Briton Ferry Ironworks

as a token of their appreciation of his kindness in managing their sick fund for a period of nine years." It is especially satisfactory to record such evidence of the good feeling which exists between workmen and agents at Briton Ferry.

The Carmarthen and Llandilo branch of the Llanelly Railway is to be opened for mineral traffic on Tuesday, and the narrow gauge communication between Carmarthen, Llandovery, Llanelly, Cwmaman, Ystalyfera, and Swansea will then be complete. The opening of this section will, no doubt, give a vast impetus to the trade of the district.

The well-known Hafod estate was sold by Messrs. Leifchild and Cheffins, on Monday, at Garraway's Coffee-house, London. A large company assembled on the occasion, and Mr. Cheffins, after some preparatory remarks on the prominent points of the property, offered the entire estate in one lot, including the minerals, but exclusive of the timber. The bidding not reaching the required amount, the estate was withdrawn at 95,000*l.* It was then put up in five lots, of which only one lot was sold, which includes the Hafod Arms Hotel and 400 acres of land adjoining, which was purchased by Mr. J. B. Balcombe, for the Devil's Bridge Hotel Company, for 8000*l.*

The latest arrivals at Swansea include the Petite Payonne from Redan, with 162 tons iron ore; Havre from Havre, with six casks and one case of lead ore, for H. Bath and Sons; Emily Faithful from Tai tal, with 1200 tons copper regulas, for H. Bath and Sons. This is the largest cargo of copper that ever entered Swansea, value 50,000*l.* Virginia with Genoa, with 295 tons copper ore, for H. Bath and Sons.

THE RATING OF COLLIERIES FOR THE RELIEF OF THE POOR.—At the Glamorganshire Quarter Sessions, held at Cardiff this week, two important appeals were heard in reference to colliery rating. The first was Cartwright (appellant) *v.* the Churchwardens and Overseers of the parish of Gellygare (respondents), and the Dowlais Iron Company (co-respondents). The appellant's colliery was assessed at a gross rateable value of 2583*l.*, and a nett rateable value of 2066*l.* The quantity of coal upon which the assessment was based was 34,798 tons, and the overseers had fixed the nett value at 2s. 1d. per ton. For several years the assessment was 7½d. per ton, but now that the colliery was nearly worked out, and the cost of production greater, the parish authorities thought proper to increase the valuation. According to the appellant, the total quantity of coal raised per annum was 27,193 tons, and the cost of the same at the pit's mouth was 3823*l.*, being about 3s. 1d. per ton, long measure. Then the cost of transit to Cardiff and Newport, wagon charge, and office expenses would amount to another 3s. 3½d. per ton, which would be 4447*l.*, making a total expense of 8270*l.* Next, capital had to be considered, and this, it was contended, ought to be six months' working expenses, or about 4000*l.*, as the coal was principally paid for in bills which had to be discounted. Deductions ought also to be made for royalty, income tax, &c., and these would amount to 1718*l.*, making a total cost of 9988*l.* The gross amount realised for the coal was 10,956*l.*, leaving the nett rateable value at 968*l.*, or 9½d. per ton on the coal raised. The answer of the respondents was, that the appellant had refused to afford to the respondents' assessor, Mr. Brodie, C.E., any information in respect to the property, and that, therefore, the latter was obliged to rely on approximate data, procured from other sources, in arriving at a calculation. They maintained that the deductions asked for by the appellant were excessive, and that the true test of the rateable value of a colliery was the royalty it would produce. A great deal of evidence was given on both sides, and the Court decided that 1s. 4d. per ton on the coal raised should be the rateable value, which would amount to 1383*l.* The magistrates decided that each side should pay its own costs. The second case was Mordecai Jones (appellant) *v.* the Churchwardens and Overseers of the parish of Aberdare. The appellant's colliery was formerly assessed at 6d. per ton, but by the last assessment it had been raised to 9½d. per ton. The details of this case did not materially differ from the other, except that the cost of producing the coal was considerably greater, and, consequently, the profits were proportionately less. The magistrates reduced the assessment to 7d. per ton. There were several other colliery appeals, and it was arranged that the cases should stand adjourned until Dec. 8, when a special sessions will be held to dispose of the same.

TIN.—At the British Association, Mr. J. CRAWFURD read a paper on the Sources of the Supply of Tin for the Bronze Tools and Weapons of Antiquity. Tin, as is well known, is found only in a very few parts of the world, and the only localities producing it which have reference to the question under consideration are England, the Malayan Peninsula, and northern China. The ore is easily reduced, and in early time was found in drift or alluvium. The tin formations of the Malayan countries are the most extensive in the world. These three sources are the only principal ones from which the nations of ancient Europe could have derived this metal. Tin would be supplied in the same manner as silk and spices, with the difference of being imported from the West as well as from the East. Merchants dealing in the metal would convey it as far as it fetched a profit, until western and eastern tin met at a central point, which may have been Egypt. All the nations west of it would be supplied with British, and all those east of it with Malayan or Chinese tin. British tin would be conveyed by land to the Channel, then, crossing it, reach France, and through France find its way to Italy, Greece, and Egypt. The author totally disbelieved, with Sir Cornewall Lewis, in the voyages of the Phœnicians to the Scilly Islands, through which they are imagined to have supplied the Eastern world with Cornish tin. The voyage from the entrance of the Mediterranean would be 1000 miles in a straight line over a stormy ocean; a voyage very unlikely to be performed by ancient mariners, who, we know, even in the Mediterranean, only crept along the coasts, hauling their craft ashore in foul weather. Besides, the Scilly Islands, the supposed Cassiterides, afford no evidence of having ever produced tin. There is no evidence that either the Greeks or the Phœnicians ever passed the Straits of Gibraltar.

STEAM-BOILERS.—At the British Association, Mr. ZERAH COLBURN read a paper on Steam-Boilers, in which he entered at considerable length into the theory and practice connected with them, pointing out the causes of failure and bursting, and showing the value of cast-iron as a material for the purpose, when of a spherical form, and that small cast-iron spheres do not retain the solid matter deposited from the water. Small water tubes and small water spaces in ordinary boilers always choke with deposit when the feed-water contains lime, but cast-iron boiler spheres, although they may be temporarily coated internally with scale, are found to part with this whenever they are emptied of water. This fact is the most striking discovery that has been made in boiler engineering. It removes the fatal defect of small subdivided water spaces, which can now be employed with the certainty of their remaining constantly clear of deposits. This discovery has been made in the use of the cast-iron boiler invented by Mr. Harrison, of Philadelphia, United States, and which is now working in several of the midland and northern counties. Mr. Harrison employs any required number of cast-iron hollow spheres, 8 inches in external diameter and three-eighths of an inch thick, communicating with each other through open necks, and held together by external tie-bolts. A number of these spheres are arranged in the form of a rectangular slab, and several of these slabs set side by side and connected together form the boiler; about two-thirds of the whole number of spheres being filled with water, while the remainder serve as steam room. The bursting strength of these spheres corresponds to a pressure of upwards of 1500 lbs. per square inch, as verified by repeated experiments, between six and seven times greater than that of the ordinary Lancashire boilers of large size. The evaporative power, as in all other boilers, depends upon the extent and ratio of the grate area and heating surface. In practice from 7½ lbs. to 8 lbs. of water are evaporated per pound of coal in a cast-iron boiler, which for each ton of its own weight supplies steam equal to ten indicated horse-power. The joints between the spheres are made by special machinery, securing the utmost accuracy of fitting, and there is no leakage either of water or steam; the spheres occupied as steam space are screened by fire-bricks from the direct action of the heat, but enough is allowed to reach them to secure complete drying, and if desired any degree of superheating of the steam. The slabs into which each series of spheres is assembled are placed in an inclined position, which secures the thorough circulation of the water. The whole quantity of water carried in a 40-horse boiler is 3 tons, the boiler weighing 13 tons and presenting 1000 square feet of water-heating and 500 square feet of steam-drying surface. In Manchester, with the feed-water taken from the Irwell or from the canal, a hard scale is soon formed in the ordinary boilers, but in the cast-iron boiler a succession of thin scales of extreme hardness are found to form upon and become detached of themselves from the inner surfaces of the water spheres. The scales are blown out with the water at the end of the week and only small quantities can be discovered when purposely sought for. (A specimen of these, slightly cohering together in a friable mass, was exhibited.) A pint of loose scales and dirt is the most that has yet been found in a careful internal examination after nine months' daily work. None of the iron is removed with the scale, the weight of the spheres, after three years' service, being the same as when new. In America, Mr. Harrison's cast-iron boiler has been worked six years. Messrs. Denton, chemists, of Bow Common, London, have had one in use for three years; and for the last two years the same description of boiler has been employed at Messrs. Hetherington's and other large works in Manchester. It should be added that the system of casting the spheres is such that their thickness is necessarily and invariably the same at all points. The self-acting action, which has been found to be the same in all cases where the boiler has been worked, has been explained by conjecture. It deserves the careful investigation of the chemist and mechanical philosopher, with whom the author prefers to leave the subject.

ASSOCIATION FOR THE PREVENTION OF BOILER EXPLOSIONS.—At the last monthly meeting of the Executive Committee, held at the offices, Corporation-street, Manchester, on Tuesday, Mr. Hugh Mason, vice-president, in the chair, Mr L. E. Fletcher, chief engineer, presented his report:—A case of a dangerously defective fusible plug has been met with. The fusible metal was cast in the shape of a flat washer, a trifle larger in diameter and a little thicker than a penny piece. To fix this washer in its place, it had merely to be dropped into its brass socket or cup attached to the furnace crown, then a ring cap screwed over it, so that by simply unscrewing this cap the fusible washer was released, and could thus be removed and renewed at pleasure. These flat fusible washers have proved too weak to resist the pressure of steam, and have been punched completely through. In the instance referred to the boiler, which had two furnaces, was a new one, and had not been at work many days. The pressure of the steam was 45 lbs. to the inch, and there was plenty of water over the furnace crown the moment the plug gave way. The rush of water put out the fire, and scattered the hot ashes; had the furnace door been open and the stoker firing, he would no doubt have been dangerously scalded. This is by no means an individual instance of the failure of this description of plug. It is the second that has recently occurred to our own members; while several others have come to my knowledge. Since the last report, an explosion happened at a sawmill, to a boiler of a very small size. It appeared, on examination subsequent to the explosion, that there had been a continual leakage from the seams at the bottom of the boiler, the water from which was ponded by the brickwork of the midfeather wall, and held in contact with the plates. They were in consequence so eaten away by corrosion that they were reduced in a continuous line of 4 ft. 6 in. in length to the thickness of a sixpence, while many of the rivet heads at the bottom of the boiler were eaten off. It is not surprising, therefore, that the boiler should have rent as it did along the bottom, almost from end to end, and that it should have been thrown up into the air for a considerable height. Another explosion, by which three lives were lost, occurred to a colliery boiler not under the inspection of this Association. The primary rent took place at the chimney end of the boiler, and at the longitudinal seam of rivets which ran from one end of it to the other, a little below water line, and on the right or north side. The water with which the boiler was fed was drawn from the limestone, which it was stated at the inquest was found to fir the boilers in three weeks, which must have proved very trying to those of the externally-fired class. The exploded one had originally been fired upon the right or north side, and repairs at that part had been rendered necessary. Boilers are frequently injured by repairs, and it was just where these had been executed, and with plates of very brittle and inferior quality, that the primary rent occurred. In boilers plated longitudinally from end to end, as this one was, a hinge or buckling action frequently takes place at the overlap. This tendency is considerably augmented when boilers are not circular, and, in answer to enquires, it was stated that this one had been three inches oval, so that the internal pressure would tend to change its shape every time the steam was raised or lowered. This action exercises a very fatiguing influence upon the plates, and is apt to crack them partially through from rivet hole to rivet hole the cracks being entirely out of sight, since they occur under the overlap and between the two plates. The superintending mechanic at this colliery assured me that it was very customary for them to detect these cracks on taking out old plates from their own boilers, and since the cracks in a plate could not be seen until the adjoining one was removed, it was frequently found that the removal of one plate led to that of a second, and sometimes to that of a third, or even more. On examining the edge of the fractured plate at the part where the rupture had evidently commenced, there was every appearance of there having been an old crack, penetrating nearly half way through the plate, and running longitudinally from rivet hole to rivet hole, just as these already described had done. I do not attribute this explosion, therefore, to shortness of water or to excessive pressure of steam, of neither of which was there any evidence, but consider that it was due to the unreliable character of these externally-fired boilers, especially when, as in the present instance, they are plated longitudinally from end to end, not made truly circular, repaired with plates of inferior quality, and fed with sedimentary water. Those in charge of these boilers considered them perfectly safe up to the moment of explosion, and the fact of their having been so thoroughly taken by surprise has very much shaken their faith in boilers of this class; and, therefore, the attention of colliery proprietors is again called to the importance of their taking into immediate consideration the superior safety of boilers internally fired. On the present occasion I have to report five explosions, from which nine persons have been killed, and 17 others injured. Not one of these explosions, however, occurred to boilers under the charge of this Association; while the distance at which they have all taken place has precluded my making a personal investigation on the spot.

## NEW INVENTIONS.

PROVISIONAL PROTECTION for six months has been granted for the following:—

J. TAYLORSON, Blackburn.—Improvements in machinery or apparatus for working coal or other minerals. Sept. 19.

J. ATKINSON HARRISON, Newcastle-upon-Tyne.—Improvements in applying to useful purposes the slag or scoria of blast-furnaces, and other furnaces used for smelting or melting metals and metallic ores. Sept. 26. [other articles. Sept. 29.

T. BENNETT, Derby.—Improvements in kilns for burning quarries, tiles, bricks, and

A. A. CROLL, London.—Improvements in the sulphate of alumina. Sept. 30.

H. J. STANDLY, Westminster.—Improvements in welding iron and other metals. Oct. 4.

LETTERS PATENT have been issued for the following:— [23.

T. N. TREGASKIS, Stratford.—Improved apparatus for raising and forcing fluids. April

H. BENNETT, Wombridge, Salop.—Improvements in puddling iron, steel iron, and steel, and in apparatus or machinery for facilitating the operation of puddling. April 23.

H. AIKEN, Falkirk, Sterling.—Improvements in the system or mode of calcining and extracting the oils and gases from ironstone and other materials. May 9.

LIST OF SPECIFICATIONS published during the week:—

Manufacture of articles from cast-iron, 4d.; machinery for getting coal, stone, &c., 10d.; consuming smoke in furnaces, 1s. 4d.; furnaces, 1s. 4d.; manufacture of zinc white, 4d.

L. DE FONTAINEMOREAU.

PUDDLING MACHINE.—Mr. Griffiths' puddling machine, so favourably noticed in most of the scientific and mechanical journals, bids fair to produce a revolution in the puddling system. Having observed in a long practical career the arduous and disagreeable character of the puddler's labour, Mr. Griffiths has devoted much thought and study to the application of machinery to the process. The result is the machine mentioned some time ago in these columns, which, Mr. Griffiths quaintly tells us, will "not grumble at iron however grey, and will work in weather never so hot. It is not fitful nor moody in its temperament, and as a consequence its product is the same from day to day, being always worked alike. And as it is also untiring, it is enabled to work the iron longer and better than the strongest man could do." The machine may now be said to be fairly before the mechanical world, and its successful working is, we are informed in several important testimonials, beyond all question. The inventor says, "The apparatus is not complicated nor costly; can be placed on any ordinary furnace, and will not only work double the quantity of metal usually operated upon, and, as aforesaid, finish it better, but it will do it with a less percentage of waste. Although the machine is comparatively simple, it possesses some peculiar feature not to be found in any other puddling machine, by which it is fully adapted to the nature of the work to be done; and, I would ask especial attention to the arrangements in the application of the power to the rabble, whereby the supple and elastic action of manual labour is so successfully imitated. It is not sufficient, for the thorough working of the metal that the rabble be regularly and mechanically moved backwards and forwards in the furnace, even when, by the application to it of a radial motion, it is made to pass over the greater part of the surface of the furnace and through the metal therein. A rigidly-moving tool not only does not thoroughly stir and bring up to the refining influence of the air the whole of the metal, but it unnecessarily wears the bottom and sides of the furnace, and wastes the iron, by leaving particles attached to the various portions of the walls, which its regular action fails to touch. So far as it has been tried (as will be seen from the testimonials in its favour) it has given the fullest satisfaction; and, I am happy to be able to state, that in nearly all cases thus far, the workmen have taken hold of it with a kindly feeling, and are treating the 'Iron Man' as a friend and helper. It is not to be expected that this machine or any other will supersede entirely human skill and exertions. The judgment, attention, and practical experience of the puddler will always be required so long as the present system of making iron shall last; but this apparatus will lessen very much the mere physical toil now required in the process, and as it vastly more than pays for its application, in the increased quantity and better quality of the work accomplished, it should be a boon to both employer and employed."—*Derby and Chesterfield Reporter.*

HOW TO TEST QUICKSILVER, AND DETECT ADULTERATION.—Quicksilver after being extracted by the plain process of retorting, is seldom quite pure, and generally contains a small proportion of other metals. The eminent naturalist Priestly suggests a very simple method to purify mercury, by merely shaking it strongly in an iron flask, and renewing the air in the same repeatedly with a pair of bellows. By this manipulation a black powder will be formed on the surface, which can easily be separated. If no more of this dust is formed the quicksilver may be considered pure. In this state it will always give a clear sound when agitated in the flask, while an admixture of lead will make it sound dull, as if the vessel were made of potter's clay. It is often found in the market wilfully adulterated with lead, tin, and bismuth. Of lead, it can absorb or dissolve almost one-half of its weight, without losing much of its liquidity. This adulteration can easily be discovered by rubbing some of the metal on the open palm; if it soils the skin it is adulterated—if pure it leaves no trace. Besides, it dosed with lead, it will leave a tail behind—*il fait la queue*, to use a French expression—that is, the drops, instead of being globular, will assume an elongated form, and a more or less flattened surface. Some of these observations may be, perhaps, useful to the gold miner, as many complaints have latterly been heard about the impurity of the quicksilver sold in the mines, which fact is also proved by the frequent occurrence and admixture of base metal in the amalgam gold, probably in most cases, by artificial means.—*San Francisco Mining and Scientific Press.*

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending October 23 was 11,336*l.* 8s. 11d.

## WEATHER PREDICTIONS.

SIR,—The winds and gales foretold in the Journal for the present month have occurred, almost to the hour named in my letters. The Meteorological Department of the Board of Trade pretend to give cautionary warnings of the approach of gales round our coasts; but when we are informed that 26 poor fishermen lost their lives, as in Scotland, by the gale of the 21st and 22d, leaving widows and orphans to the mercy of the world, we are inclined to ask what the Board of Trade signals are worth? The fact is, these signals are so often "false alarms," that no one takes any notice of them, and they do more "harm than good." I was at Cardiff last year; down came the signal to "hoist the drum." Several persons asked me—"Are we going to have a gale?" I replied—"There is no gale due; it is a false alarm." The signal was up some time, and then hauled down again, without any gale or other atmospheric disturbance. From these repeated failures people have ceased to notice the signals, and I have no doubt but this is how the 26 poor fishermen lost their lives.

With reference to the future of the weather, strong winds will occur again on the 30th. From the 1st to the 4th of November I think the phenomena will be too strong to admit of the weather being bad. After the 4th the weather will be changeable, with winds on the 7th. I shall be very much surprised if we do not hear of earthquakes or waterspouts about the 2d and 10th of November; that of the 2d may not occur in England, but the latter will be felt somewhere in England.

26, *Throgmorton-street, Oct.* 26. GEORGE SHEPHERD, C.E.,
Author of the "Climate of England."


WANTED, as PARTNER or OTHERWISE, a PERSON who can ADVANCE from FIVE to SIX HUNDRED POUNDS, to ENABLE a PARTY to DEVELOPE a PLAN for the REDUCTION of COPPER ORES, whereby a great saving will be realised, and large profits secured.—Full particulars will be given on application to Mr. W. F. RAWLE, patent and mining agent, 39, Bridge-street, Bristol.

RIGHT OF WORKING MINERAL FOR SALE, on the LANDS of ORCHARDHEAD, parish of BOTHKENNAR, STIRLINGSHIRE.—Full information, with plans, may be obtained of Messrs. MACKENZIE and KERMACK, W.S., 9, Hill-street, Edinburgh.

TO CAPITALISTS.—The LESSEE of a FIRST-RATE COLLIERY in NORTH WALES WANTS a PARTNER, with about £2000. A mining engineer or practical colliery manager might have the management. A profit of 4s. per ton can be clearly shown on the coal raised in the royalty, which is an extensive one.—Address, "Bryn," care of Mr. H. Greenwood, advertising agent, Liverpool.

TO CAPITALISTS.—A gentleman having discovered upon his estates FINE LODES, and of very encouraging prospects for LEAD and COPPER ORE, has the same TO LET, on moderate royalty. A small quantity of lead has been found in one lode. Shares would be taken at once should the work discovered be formed into a company.—Address, "L. M. N.," Post-office, Ferryside, Carmarthen, South Wales.
P.S.—Also TO BE LET, a VALUABLE LEAD MINE in SOUTH WALES.

TO CAPITALISTS AND BROKERS.—TO BE SOLD, a FIRST-CLASS OPENING for a SLATE QUARRY, on a tried vein, near Bangor, which is one of the richest and purest in North Wales. Full particulars, including a reliable report, can be submitted to parties willing to treat.—Communications to be addressed to "J. H.," 20, Ducie-grove, Oxford-street, Manchester.

TO INVENTORS AND PATENTEES.—A GENTLEMAN having an extensive connection with manufacturers, merchants, and others, would be GLAD to UNDERTAKE the SALE of INVENTIONS or PATENTED ARTICLES, on commission.—Apply to Mr. RAWLE, patent office, 14, Clare-street, Bristol
N.B.—Continental and foreign agencies solicited.

CHARLES DAVEY AND CO.,
SAFETY FUSE MANUFACTURERS,
ST. HELEN'S JUNCTION, LANCASHIRE.

THE NORWEGIAN TITANIC IRON COMPANY.—The above company beg to CALL the ATTENTION of IRONMASTERS and STEEL MANUFACTURERS to the IMPORTANT RESULTS that are to be OBTAINED by the USE of THEIR ORES in ADMIXTURE with ORDINARY IRON ORES.

It has been proved by the experience of ironmasters, extending over a considerable time, that even a small proportion of the Norwegian ores has a most beneficial effect on the quality of the pig, and that it increases its strength considerably, the pig when puddled making iron of a very superior quality, and of a steely nature.

The above ores when mixed with the hematites make a pig specially adapted for the Bessemer process.

The great utility of these ores for fettling has been fully established at several of the large ironworks in the North of England; they are far more durable than bull dog, magnetic oxide of iron, red ore, calcined ironstone, or any other material that has hitherto been introduced. Besides the peculiar property the Norwegian ores have of resisting great heat and fluxing action, they materially improve the quality of puddled bar.

The directors having purchased extensive deposits of the ore in Norway, and constructed a railway to facilitate its regular supply, are now preparing to import it on a large scale.

The ore can be supplied with varying proportions of iron and titanium, some containing 54 per cent. of metallic iron, and 10 to 12 per cent. of metallic titanium, others containing less iron and more titanium.

The great feature in these ores is the entire freedom from the impurites found in ordinary iron ores—viz., sulphur, phosphorus, &c., and from their containing the metals titanium and vanadium, which are found in Swedish and Russian irons of the best brands; they are peculiarly fitted for the manufacture of superior descriptions of iron and steel, and for improving the quality of inferior brands.

Applications to be made at the office of the company, 4, Park-place, Leeds.

BEST CRYSTALLISED MANGANESE SPIEGEL IRON
AND ALL OTHER KINDS OF
GERMAN NATURAL STEEL IRON,
Produced out of the best sparry iron ores, for steel manufacturing works, as well as for puddling, forge, and foundry, ironworks, to refine common iron, delivered to all ports of Great Britain, and all information given by RUDOLPH BEUTEFUEHR, Iron Merchant and Mining Agent, SIEGEN (Rhenish Prussia).
P.S.—Railway trains to and from the Rhine, via station Deutz (opposite Cologne).

TIN-PLATES—AGENCY for the SALE of WANTED, by a FIRST-CLASS HOUSE in the MIDLAND DISTRICT.—Address, "Tin-plates," MINING JOURNAL office, 26, Fleet-street, London, E.C.

HORIZONTAL ENGINES FOR SALE, at very low prices:—One 12 in. cylinder, 24 in. stroke; one 12 in. cylinder, 36 in. stroke; and two 14 in. cylinders, 24 in. stroke. All ready for delivery, and may be had with or without fly-wheels.—Apply to Messrs. E. PAGE and Co., Laurence Pountney-place Laurence Pountney-hill Cannon-street E.C.

RAILS FOR SALE.—TWO HUNDRED TONS NEW FLANGE RAILS, 72 lbs. per yard. ONE HUNDRED TONS NEW FLANGE RAILS, 35 to 37 lbs. per yard. ONE HUNDRED TONS SECOND-HAND DOUBLE HEADED, and SEVENTY TONS FLANGE, about 63 lbs. per yard.—Apply to Messrs. FIRMIN and WYATT, 27, College-street, Dowgate-hill, London, E.C.

RAILWAY WAGONS TO BE LET.—Apply to Messrs. W. L. and T. UNDERHILL, Tipton.

WANTED TO PURCHASE, a HORIZONTAL ENGINE, 16 in. cylinder, 18 in. stroke, and crank 9 in. from centre to centre, up to 15 horse power; BOILER, length 18½ ft., diameter 6½ ft., tube 3 ft. Also, ONE of Messrs. WORSSAM'S LARGE RACK SAW BENCHES.—For further particulars, apply to Messrs. PHILLIPS and LEWIS, Carmarthen.

NOUVELLE MONTAGNE COMPANY.—At the ANNUAL GENERAL MEETING, held at Liége, the 30th April, 1864, it was decided that a DIVIDEND of THIRTY FRANCS should be paid after the 20th December next, against the Coupon No. 11 of the whole shares; and a DIVIDEND of SIX FRANCS against Coupons Nos. 13, 14, 15, and 16 of each fifth of shares. The payments will be made at—

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| Verviers | By Mr. IWAN SIMONIS. |
| London | Messrs. C. DEVAUX and Co. |
| Paris | M. ROUGEMONT DE LOWENBERG. |
| Bruxelles | MM. J. MATHIEU and FILS. |
| Liége | MM. NAGELMACKERS and FILS. |
| Engis | At the Offices of the Company. |

EAST INDIA COAL COMPANY (LIMITED).—Notice is hereby given, that the ADJOURNED ORDINARY GENERAL MEETING of the East India Coal Company (Limited) will be HELD at the company's offices, 10, Serjeant's Inn, Fleet-street, in the City of London, on THURSDAY, the 3d day of Nov. inst., at Twelve o'clock precisely.

And notice is further given that, immediately upon the completion of the business of the ordinary general meeting, or upon the adjournment thereof, an ADJOURNED EXTRAORDINARY GENERAL MEETING will be held, for the purpose of confirming certain special resolutions passed at the meeting on the 26th of July last; also for the purpose of authorising an increase of the capital of the company, either by the issue of ordinary shares, or by preference or guaranteed shares; also for the purpose of authorising the board to raise an additional sum by the issue of debentures, or by mortgage upon the estates of the company. By order of the Board,

T. N. BADHAM, Sec.

No. 10, Serjeant's Inn, Fleet-street, London, E.C., October 24, 1864.

EAST DEL REY MINING COMPANY (LIMITED).—Notice is hereby given, that the THIRD ANNUAL GENERAL MEETING of the shareholders of this company will be HELD on TUESDAY, November 8, at Three o'clock, at the London Tavern, Bishopsgate-street Within, when the directors' and superintendents' reports, and also the accounts and balance-sheet, will be presented, and for general purposes, as authorised by the Deed of Settlement.

GEO. H. STANIFORTH, Sec.

Offices, 12, Bishopsgate-street Within, October 27, 1864.

LAGUNAZO SULPHUR AND COPPER COMPANY (LIMITED).—Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of shareholders will be HELD at this office, on FRIDAY, the 4th November, at Twelve o'clock, for the purpose of confirming the following resolutions passed at the extraordinary general meeting held this day:—

That the following words be added to, and read as if part of, the special resolution passed at an extraordinary meeting of the shareholders of this company, held on the 5th August, 1864, and which resolution was duly confirmed.

Provided always that in the event of this company determining to pay off any of the said "C" shares, any holders of the same shall, if they shall so desire it, and of such desire give notice to the company within one month after notice of such determination of the company, be entitled to have allotted to them, and receive from this company for the said shares, on their being delivered up to be cancelled or for any of them, a like number of ordinary shares in this company, in lieu of receiving for such shares the said sum of £1 5s. per share.

That Mr. John Randal MacDonnell be elected a director of this company.

By order, C. O. ROGERS, Secretary.

43, Moorgate-street, E.C., October 21, 1864.

SWANSEA COPPER ORE WHARVES.
TO IMPORTERS OF FOREIGN COPPER, LEAD, AND CALAMINE ORE.
Swansea, July 1, 1864.

GENTLEMEN,—We beg to inform you that, in consequence of the retirement of Messrs. W. and J. M. Williams from the copper ore trade, which they have carried on here for so many years past, we have resolved to enter upon that business, and for which purpose we have secured most eligible wharves, on the west side of the North Float, where vessels drawing 20 ft. of water can get alongside at all times. These wharves are now covered in, the floors being made of concrete to prevent waste of the ore. A powerful steam crusher has lately been erected on the premises, and is now in working order.

The business we purpose carrying on is that of COPPER ORE WHARFINGERS, combined with metal and other general agencies, which will be managed by our Mr. Thomas Elford, who for 20 years has filled an important situation under Messrs. Williams, Foster, and Co., and for the last eight years has had the entire management of their large copper smelting works, and copper and metal rolling mills, in this locality, as well as the copper ore business of Messrs. W. and J. M. Williams, which we trust will be a sufficient guarantee to our friends that any business they may entrust to our care will be conducted with the most scrupulous attention to secure the best results for their interests.

In consequence of the large number of very extensive Copper smelting works concentrated in this immediate locality, this market affords greater competition for ore than perhaps any other in the world, there being now no less than sixteen distinct Companies competing for ores sold at the public ticketing, every two or three weeks. There is also a good demand for lead and zinc, or calamine ores, several large lead and spelter works having been established in this district for some time past, and new ones are in course of erection.

Soliciting a share of your consignments of ore, regulus, and slab copper to this port, as well as a share of any general business you may have to transact in this quarter,

We remain, Gentlemen, your obedient servants,
ELFORD, WILLIAMS, AND CO.

REFERENCES:—Messrs. Williams, Foster, and Co., London and Liverpool; Messrs. Williams, Harvey, and Co., London and Liverpool; the Glamorganshire Banking Company, Swansea; Messrs. Alex. Bell and Sons, No. 8, Finch-lane, London; Mons. Armand de Lacombe, Madrid.

MINING OFFICES, MANCHESTER.

MESSRS. HARVEY AND CO., MINING ENGINEERS, AGENTS, AND SHAREDEALERS, CLARENCE CHAMBERS, MANCHESTER, are at all times in a position to deal in all the market Dividend and Progressive Mine shares, and also to advise on all mining matters, being practically acquainted with the business, and having a daily communication from the mining districts of Devon and Cornwall.

Messrs. HARVEY and Co. publish a monthly "Mining Circular," containing a valuable summary of mining information. Forwarded gratis on application.

The Circular for October contains a report on East Seton, Wh. Prosper, and Margaret.

MR. BRENTON SYMONS, M.E., has RETURNED from the MINERA DISTRICT, and will be at TRURO until the 4th NOVEMBER, from which date until the 30th he may be consulted at 18, Hatton-garden, London, E.C.

MR. BRENTON SYMONS INSPECTS and REPORTS on ANY MINERAL PROPERTY. In all cases where procurable a plan will accompany his report.—18, Hatton-garden, E.C.

CAUTION.—BEFORE BUYING a MINE SHARE READ TREVOIR AND CO.'S "MINES AND MINING," and learn the enormous risks and heavy losses awaiting all who enter on mining without experience. To the young adventurer its perusal will save scores, or perhaps hundreds of pounds.

Per post 13 stamps. C. CHAPMAN, 3, Upper John-street, Barnsbury-park, London, N.

*** Beware of gratuitous circulars and advice, and most new mines,

## ATLANTIC AND GREAT WESTERN RAILWAY COMPANY.

OFFICES,—2, OLD BROAD STREET, LONDON, E.C.
ISSUE OF SECOND MORTGAGE BONDS (OHIO DIVISION).
PAYABLE IN LONDON.

$4,000,000. Due in 1883. Coupons due 1st January and 1st July.
Secured by a registered mortgage on the income and all corporate rights, privileges, lands, franchises, plant, and property of the Ohio division of the railway.
The bonds are redeemable at par in New York, or in London at 4s. 6d. per dollar, and are transferable without stamp or endorsement.
Interest coupons are attached to the bonds, payable semi-annually, at the Consolidated Bank in London, at the fixed rate of 4s. to the dollar.
The bonds will be issued at 66, at which rate bonds of $1000 will cost £148 10s., carrying coupons due January 1, 1865.
The coupons represent £14 per annum on each bond of $1000, or 9¼ per cent. interest on price of issue.

The several divisions of the Atlantic and Great Western Railway have been consolidated under the government of James Robb, Esq., whose reputation as a banker and railway administrator is established in Europe as well as in America. Mr. Robb, as President of the Atlantic and Great Western Railway, joins the direction of the Erie and other lines forming the through route between New York and St. Louis, so as to secure unity of action.

The price of issue has been fixed at 66. The terms of issue are as follows:—

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| 5 | per cent. | on application, being | £11 | 5 | 0 | per bond of $1000. |
| 10 | „ | on allotment | „ | 22 | 10 | 0 | „ | „ |
| 15 | „ | 19th November | „ | 33 | 15 | 0 | „ | „ |
| 15 | „ | 19th December | „ | 33 | 15 | 0 | „ | „ |
| 21 | „ | 19th January | „ | 47 | 5 | 0 | less £7 coupon due 1st January. |
| Total ..... | | | £148 | 10 | 0 | | | |

Subscribers have the option of paying the instalments in advance, and will be allowed a discount of 9 per cent. per annum on such pre-payments.
After allotment scrip certificates will be issued to "bearer." These certificates will be exchanged for bonds to "bearer" on payment of the final instalment.
Forms of application may be obtained at the Consolidated Bank; or at the offices of the company, No. 2, Old Broad-street, London, E.C.; or of Mr. E. F. Satterthwaite, broker, 38, Throgmorton-street, London, E.C.—London, October 12, 1864.

## ATLANTIC AND GREAT WESTERN RAILWAY COMPANY.

ISSUE OF SECOND MORTGAGE BONDS, PAYABLE IN LONDON.

Notice is hereby given, that NO APPLICATION FOR THESE BONDS will be RECEIVED after the 31st inst. By order.
No. 2, Old Broad-street, October 21, 1864.

## BALDWIN MINING COMPANY (LIMITED), ISLE OF MAN.

—At a GENERAL HALF-YEARLY MEETING, held at the Clarence Hotel, Manchester, on Oct. 25, Mr. JOHN WINDSOR in the chair,

Mr. W. Berry (the secretary) having read the notice convening the meeting, the accounts of the past six months having been audited and found correct were duly passed.
The directors' and agent's reports were taken as read.
The Chairman having explained the present and future prospects of the mines, the shareholders present, being perfectly satisfied with the management and prospects, authorised the directors to continue their present workings.
After the business of the meeting was over, a vote of thanks to the Chairman and secretary concluded the meeting.

DIRECTORS' REPORT.

*Douglas, Oct.* 4, 1864.—In laying before you our half-yearly report, your directors have to say the progress of the work done in that period and ending Sept. 30 has been sinking Windsor shaft 13 fms., at an average price of £16 per fathom; driving south on No. 2, 7 fms. 4 ft., at an average of £5 14s per fm.; driving north on ditto, 18 fms. 4 ft., average of £4 6s. per fm.; driving west of No. 1, 2 fms., average £2 15s. per fm.; cross-cut south end of No. 2, 2 fms. 5 ft., average £6 3s. per fm.; cross-cut south on No. 1, 1 fm., £6. Cutting through from adit level to surface, over old engine-shaft, 3 fms. 4 ft., at £2 per fathom. Capt. Bawden will report to you on all these workings, and we may state that nothing is done under ground but by his instructions. Nevertheless, we consider it our duty to give you all the information we can on the present state and progress of the mine. The Windsor shaft is down 17 fms.; it has been bad for sinking for some weeks past, but has now altered for the better, and is let at the present time at £21 per fm.; this includes timbering where required, dividing, casing, fixing ladders, stages, putting down lifts, and finishing all complete, in a good and workmanlike manner, and as the early development of this mine depends in a great measure on the progress made with this shaft, you may rest assured we do all in our power to get it down as fast as possible. Still, occasional delays will occur; in June last we unexpectedly cut a strong feeder of water, which soon drove the men out of the shaft. This found us without pumps, or any gearing ready to work them, as we had not intended to put them down for a few weeks longer; but I am glad to say that with a little exertion we got patterns make, lifts cast, 100 ft. of flat-rods laid down, balance-bob made, cat-head erected, lifts lowered down, the water in fork, and the miners at work again, in 14 clear working days. In about four weeks from this time we shall have to cut plat, fix penthouse, winze, and prepare for sinking below. This will, probably, take about three weeks, after which I expect we shall be able to go down at the least 3 fms. per month. With regard to the 17 fm. workings, I may say we often cut small quantities of lead; in fact, scarcely a day passes without some of the men bringing up nice stones of ore. It is not in sufficient quantity to turn to any account, still it is very encouraging, and has, no doubt, proved one great fact—viz., that our mines are in the same strata formation as the Great Laxey, we having a short time ago cut a nice rib of steel ore, an occurrence always considered by that company to indicate large bodies of ore near at hand. I am given to understand they have seldom got anything there at less than 50 fms. in depth, so that may be some criterion to go by; but to show to what extent mining may be developed in this island, if properly and patiently prosecuted, allow me to state a few facts. The original Laxey shareholders are now receiving some 700 or 800 per cent. on their original capital; their original shares are selling at a premium of from £6000 to £7000; and to show the soundness of the undertaking, I may state the mine is selling at £200,000, with a large reserve fund, and a clear profit of £36,000 per year. We are four miles distance from this great mine, which is much nearer than some mines that claim relationship with them; but whether we be near, or whether we be distant relations, there is no doubt we have some of the same metal running in our veins. Our plant and machinery is now all completed; it answers out most sanguine expectations, and for utility of purpose is not to be surpassed by any new mine on the island. We have a powerful water-wheel, with pumping and winding-gear, pumping two shafts at one time, and winding from them, both alternately, with flat-rods, balance-bobs, cat-heads, and all other things complete, and I have no doubt capable of taking the mine down 70 or 80 fms. Our plant consists of smith's shop, good stock of tools, powder-house, dry-house, winding-house, small office and stores; our dam-heads, sluices, and water-courses are all put in a good and permanent state of repair, and I expect will stand for years to come; but you will say all this must have cost the company a good round sum. We answer, it could not be done without, and you have the balance-sheet before you with everything that has been done charged up to the present time, and we can assure you the utmost economy has been practiced in everything connected with the undertaking. And to the shareholders in general I would say, if there is anything omitted in this report they should wish to know, that by attending the general meeting, or dropping a line to the undersigned, every information will be given. JOHN WINDSOR.

*Foxdale, Oct.* 6, 1864.—In accordance with your request, I have again visited and minutely inspected the Baldwin Mine, and now beg to hand you my report thereon. Since your last general meeting the Windsor shaft has been regularly prosecuted, but has not made that progress we were led to anticipate, in consequence of meeting with several beds of strong quartz, which were found to be very wet and difficult to penetrate through, and greatly impeded the progress of the shaft; but I am now glad to see a more favourable change taking place in the bottom of the shaft; therefore, I trust we shall be enabled to make better progress in future. This shaft is now upwards of 16 fms. deep, which I anticipate is nearly at the level with the workings from the old shaft. This should be accurately ascertained by levelling the ground, and, if found to be the case, a cistern-plat should then be cut, a cistern placed here to receive the present lift of pumps, which will have to be stationed at this level, and smaller ones obtained, in order to continue the sinking under this level; and this I cannot urge too strongly to have carried into effect with all the speed possible, as the speedy development of the mine depends entirely on the sinking of this shaft. In referring to this shaft in my last report, you will observe I there advised the letting of 10 or 15 fms. in one bargain by contract, and, if completed within a given period, the men should be entitled to a small premium, which would be the means of inducing the men to use every exertion, in order to gain it; 9 fms. were let in this way in May last, but after sinking a few feet they met with an influx of water, and the miners gave up their bargain. The 17 fm. level has been extended south since your last meeting about 8 fms.; but as yet no good results have been obtained. The vein in the present forebreast is small and unproductive. This level has lately intersected a small string, or feeder, on which a level is opened a little distance towards No. 3 vein. This has yielded some small pieces of lead ore, and, although not of much value at present, is, nevertheless, encouraging, as feeders of this kind often have a favourable influence when they cross the main vein, and probably it might at the point of junction with No. 3 vein. The distance to drive this level to intersect the latter would be about 13 fms., and would be upwards of 20 fms. in advance of the forebreast formerly driven on it from the old engine-shaft. I beg to refer you to the plan for more explicit information. There has been a level extended upwards of 20 fms. north on No. 2 vein, and which is thought to have intersected one of the east and west lodes. This I consider very doubtful, but is more likely to prove merely a shift for a short distance of No. 2 vein, occasioned by a bar of strong ground, and is now taking its regular course again. This forebreast contains a very fine-looking vein, and no doubt will shortly intersect the east and west veins, where we may naturally look for an improvement. Having now briefly described the character of the veins and the work accomplished since your last meeting, I beg also to offer a few remarks respecting their future development. In the first place, I can only reiterate what I have before recommended, viz.—the sinking of the engine-shaft with all speed possible, as you are aware no great results can be expected at the present depth, although but few young mines have shown better symptoms so near the surface. The 17 fathom level should be continued north on No. 2 vein until it intersects the east and west veins; also to drive west on the string cut in the driving of the south level, for the purpose of proving it, and also to intersect the No. 3 vein on the junction. EDWARD BAWDEN.

**ISAAC FRANCIS, NANT, WREXHAM,** a dresser of 30 years' experience, is OPEN to INSPECT ANY DRESSING PLACE on moderate terms. Mr. Francis can introduce PLANS of IMPROVEMENTS that will SAVE THIRTY PER CENT. COST in certain departments of any dressing floors.

**CAPT. C. WILLIAMS, TYN-Y-WERN, TALIESIN,** via SHREWSBURY, has had upwards of 20 years' practical experience in mining, during which time he had the entire management of several English and Welsh mines. Residing in the centre of the CARDIGANSHIRE MINING DISTRICT, and in close proximity to those of MERIONETHSHIRE and MONTGOMERYSHIRE, he OFFERS HIS SERVICES to SURVEY and REPORT UPON ANY MINE.

**PRACTICAL MECHANICS' JOURNAL** for November (Part 200, price 1s.), with a copper-plate engraving of Patterson's Patent Grinding, Crushing, and Hulling Mill, and forty wood engravings. Original Articles on the Northern Collieries, Ringed Structure in Ordnance, the Dutch System of Field Artillery, Construction of Public Court Houses, Cause of the Bursting of the Bradfield Dam, Pneumatic Railway at Sydenham.—Recent Patents: Holden and Forshaw, Looms; Stockman and Scott, Embankments; Lucius, Colours; Birtwistle and Furnival, Fabrics; Johnson, Superphosphates.—Reviews: Mechanics' Library, Correspondence, Scientific Societies, Monthly Notes, Marine Memoranda, Prices Current, List of Patents, Registered Designs.
London: Longmans, Paternoster-row; Editor's Offices (Offices for Patents), 47, Lincoln's Inn-fields.

### In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the WHEAL ALBION SILVER-LEAD MINING COMPANY.—Notice is hereby given, that ALL CREDITORS of the ABOVE-NAMED COMPANY are REQUIRED, on or before the 9th day of November next, to SEND IN THEIR NAMES and ADDRESSES, and the AMOUNTS and PARTICULARS of THEIR SEVERAL CLAIMS on the said company, to William Michell, Esq., the Registrar of the said Court at Truro.
Dated Registrar's Office, Truro, October 26, 1864.

### In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the WENDRON UNITED MINING COMPANY.—The Registrar of this Court has appointed the 29th day of November next, at Eleven o'clock in the forenoon, at the Registrar's Office at Truro, to SETTLE the LIST of CONTRIBUTORIES of the ABOVE-NAMED COMPANY, now made out and deposited at the said office.
WILLIAM MICHELL, Registrar of the said Court.
Dated this 26th day of October, 1864.

### In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the ALFRED CONSOLS MINING COMPANY.—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY by the Court was, on the 22d day of October inst., presented to the Vice-Warden of the Stannaries, by William Harvey, John Pool, and William Hosken, shareholders of the said company, and that the said petition is directed to be heard before the Vice-Warden at Truro, within the Stannaries, on Wednesday, the 16th day of November next, being the first day of the next sittings of the said Court at Twelve o'clock at noon.
Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioners, or their solicitor or agent, of his intention to do so, such notice to be forthwith forwarded to P. F. Smith, Esq., secretary of the Vice-Warden, Truro.
Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same from the petitioners, or their solicitor or agent, within 24 hours after requiring the same, on payment of the regulated charge per folio.
On the application of the company, or of the creditors, an official liquidator may be appointed at the hearing of the said petition.
Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 12th day of November next, and notice thereof must at the same time be given to the petitioners, or their solicitor or agent.
HENRY SEWELL STOKES, Solicitor, Truro
(Agent for John Roscorla, Solicitor for the Petitioners, Penzance).
Dated Truro, October 26, 1864.

### In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the NORTH POOL MINING COMPANY.—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY by the Court was, on the 14th day of October inst., presented to the Vice-Warden of the Stannaries, by Henry Borrow, a contributory of the said company, and that the said petition is directed to be heard before the said Vice-Warden at Truro, within the said Stannaries, on Wednesday, the 16th day of November next, being the first day of the next sittings of the said Court, at Twelve o'clock at noon.
Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, his solicitor or agent, of his intention to do so, such notice to be forthwith forwarded to P. P. Smith, Esq., secretary of the Vice-Warden, Truro.
Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same, from the petitioner or his solicitor, within 24 hours after requiring the same, on payment of the regulated charge per folio.
Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 12th day of November next, and notice thereof must at the same time be given to the petitioner, his solicitor, or agent.
JOSEPH ROBERTS, Truro
Dated Truro, October 26, 1864. (Solicitor for the Petitioner).

### In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

*IN RE EAST TRESKERBY MINE.*

TO BE SOLD, pursuant to an Order made in a Cause Cardozo *v.* Michell and Others, dated the 23d day of August last, at the Registrar's Office, Truro, on Wednesday, the 9th day of November next, at One o'clock in the afternoon,
40 (1024ths) PARTS or SHARES of the defendant Joseph Michell,
25 (1024ths) PARTS or SHARES of the defendant W. P. Payne; and
40 (1024ths) PARTS or SHARES of the defendant James Spencer,
Of and in the said MINE. HODGE, HOCKIN, AND MARRACK, Truro
(Agents for S. T. G. Downing, Redruth, Plaintiff's Solicitor).
Dated Registrar's Office, Truro, October 27, 1864.

EAST DOWNS MINE—SHARES FOR SALE.

MR. LITTLE WILL SELL, BY AUCTION, at Tabb's Hotel, Redruth, on Friday, the 4th day of November, at Four o'clock P.M., in lots, to suit purchasers, ONE HUNDRED (100 1200ths) SHARES (trust property) in EAST DOWNS MINE, near Scorrier. This mine is bounded on the west by Wheal Rose, on the north by North Treskerby, and on the south by Hallenbeagle, and has been profitably worked on the backs of the lodes to a very considerable extent; and now, with the aid of machinery, there is little doubt but that it will become a great and profitable mine, and well deserves the attention of persons who are inclined to invest in such property. The very valuable discovery recently made at Wheal Rose, which is close adjoining, and on the same lodes, justifies the anticipation that East Downs may soon be equally valuable, especially as the lodes have been worked so extensively on the backs.
Further particulars may be known on application to the Auctioneer, at Redruth; or to Messrs. Rodd and Cornish, solicitors, Penzance.
Shares in several other mines will be offered after the above are sold. Parties wishing to dispose of any shares by auction can have them put up by writing the Auctioneer.
Dated Redruth, October 26, 1864.

ELSWICK COAL MINES, NEWCASTLE-UPON-TYNE.

MR. FRANK MERCER WILL SELL, BY AUCTION, at the Turk's Head Inn, Newcastle-upon-Tyne, on Saturday, the 26th day of November, 1864, at One o'clock precisely, ONE-EIGHTH SHARE, and ONE-HALF of one other ONE-EIGHTH SHARE, of the VALUABLE COAL MINES under the TOWNSHIP of ELSWICK, NEWCASTLE-UPON-TYNE, containing upwards of 800 acres, consisting of valuable seams of coal yet unwrought, and of the Brockwell seam, now in the course of working by Messrs. Cochrane, the lessees.
Printed particulars may be had of the Auctioneer, at his office, 28, Clayton-street, Newcastle-upon-Tyne; of Messrs. Domville, Lawrence, and Graham, solicitors, 6, New-square, Lincoln's Inn, London, W.C.; Messrs. Lamb, Brooks, and Challis, solicitors, Basingstoke; and of Messrs. Clayton, solicitors, Newcastle-upon-Tyne.

PARAFFINE WORKS FOR SALE,
In consequence of the expiration of the partnership of the firms.
UPSET PRICE, £50,000.

THERE WILL BE SOLD, BY PUBLIC ROUP, within Messrs. Cay and Black's Sale Rooms, No. 65A, George-street, Edinburgh, on Wednesday, the 16th day of November next, at Two o'clock afternoon (if not previously disposed of by private bargain), the original and well-known PARAFFINE AND PARAFFINE OIL WORKS at BATHGATE, belonging to and carried on by Messrs. Young, Meidrum, and Binney, under the styles or firms of E. W. Binney and Co., and E. Meidrum and Co., respectively, comprising LAND, BUILDINGS, STEAM ENGINES, MACHINERY, TANKS, and whole FIXED and WORKING PLANT, with the exception of coals, chemicals, casks, and stock, both manufactured and in process of manufacture, together with all rights belonging to the partnerships, all as occupied and used by the said firms.
The works are situated in the vicinity of Bathgate, upon the railway from Bathgate to Morningside, by which they are intersected, and there is a communication by railway from the works to the Edinburgh and Glasgow, the Caledonian, and the Monkland Railways.
The lands extend to about 25 acres, and the feu duty unredeemed amounts to £161 2s. 8d. or thereby.
The works may be seen on Mondays, between the hours of Twelve and Three, by tickets only, which may be had at Messrs. Horne and Rose's chambers, 39, North Castle-street, Edinbugh, by whom offers for purchase by private bargain will be received.
The articles and conditions of sale may be seen in the hands of Messrs. Horne and Rose; or at the works, on the days of view.
39, North Castle-street, Edinburgh, October 26, 1864.

VALUABLE MINING MACHINERY AND MATERIALS FOR SALE, BY PUBLIC TENDER.—The whole of the VALUABLE MACHINERY and MATERIALS now standing upon and in the PENRHIW MINE, situate about 1¼ mile from Ponterwyd, and about 14 miles from Aberystwith, is hereby OFFERED FOR SALE, BY PUBLIC TENDER, by order of the mortgagee. Tenders, in writing, to be delivered by noon on Wednesday, the 2d day of November, 1864, at the offices of Messrs. Brady and Son, No. 35, Old Jewry, London.
Particulars, with conditions of sale, can be obtained at the mine; of Mr. Theo. Paul, Aberystwith; and of Messrs. Brady and Son. The machinery and effects can be viewed on application to Capt. Boundy, on the mine.

IRON.—TO BE GRANTED, for a term of 21 years, the RIGHT to WORK a very EXTENSIVE MINE of RICH HEMATITE IRON ORE, situate in the parish of SHAUGH PRIOR, on the south coast of Devon, about six miles from a wharf belonging to the proprietors, where the ores can be shipped free of dues, and at all seasons of the year.
The South Devon and Tavistock Railway passes within a very short distance of the mine, and is in direct communication with the wharf, thereby affording facilities for running the trucks alongside of the vessels.
For further particulars, and to treat for a sett, application to be made to Mr. C. L. Radcliffe, solicitor, Plymouth.

TO IRON AND COAL MASTERS AND OTHERS.—IMPORTANT MINERAL PROPERTY TO BE LEASED, situate in the parish of MERTHYR TYDVIL, county of GLAMORGAN, SOUTH WALES. About SIX HUNDRED ACRES of LAND, called CEFN GLAS, and other farms, adjoining east to the property where the far-famed Nixon and Co.'s steam coal underlies. Veins of coal have been proved of 3 ft. thickness. The Taff Vale and Great Western Railways, and the Glamorganshire Canal, run through the property aforesaid.—Further particulars by letters, addressed Mr. Lewis Jenkins, Ynysowen Farm, Troedyrhiw, Merthyr Tydvil. Mr. J. Jenkins, Cefn Glas, within ten minutes' walk from the Quaker's Yard station on the railways aforementioned, will show the property.

TO COLLIERY PROPRIETORS.—TO BE SOLD, BY PRIVATE CONTRACT, ONE 25 in. cylinder CONDENSING BEAM ENGINE, 5 ft. stroke, with fly-wheel 14 ft. diameter, jack head and feed pump 6 ft. diameter, winding drum for flat rope, 2 pump cranks for 5 ft. stroke, with TWO wrought-iron CYLINDRICAL BOILERS 24 ft. long, 6 ft. diameter, with steam pipes and fittings; the above in good order, and suitable for pumping and winding. Also, ONE DIRECT ACTING PUMPING ENGINE, 45 in. cylinder, 9 ft. stroke, with metallic piston, double beat valves and connections; ONE wrought-iron CYLINDRICAL BOILER, 29 ft. long, 6 ft. diameter, in excellent working order.—To view and treat for the same, apply to Mr. Hales, Broncoed Colliery, Mold, Flintshire.

MERIONETHSHIRE, NORTH WALES.

TO BE DISPOSED OF, a SLATE QUARRY PROPERTY, vein proved, and position commanding all advantages. Also, a VALUABLE GRANT, possessing a RICH SILVER-LEAD MINE, with other lodes, very favourable.—To treat for the same, apply to Mr. H. P. M. Owen, C.E., Penrhyndendraeth, via Carnarvon.
Mr. Owen has OTHER MINES and QUARRIES TO DISPOSE OF. Also, begs to offer his services to gentlemen in all inspections of native mineral, with practical reports thereon. Immediate attention given.

TO QUARRY PROPRIETORS AND CAPITALISTS.—TO BE LET OR SOLD, a capital prospect for a FLAG and SLATE QUARRY of the best blue stones. The vein is 100 yards wide, crossing the Newtown and Machynlleth (Montgomeryshire) Railway. Plenty of water at all times close by to drive any machinery necessary. The turnpike-road is on the other side of the river. A level is driven into the rock 20 yards, improving as it goes down. The blocks deepen one yard in three. Owen Hughes, late manager, Llechwed Quarry.—Apply to Mr. John Jones, Coedyrhyd, Commins Coch, via Salop.

GRANITE QUARRY, STEWARTRY OF KIRKCUDBRIGHT.—TO BE LET, for such term of years as may be agreed on, the QUARRY immediately ADJOINING the LITTLE FLEET VIADUCT, between Gatehouse and New Galloway stations, on the Port Patrick Railway. The quality of the granite is excellent, as may be seen by inspection of the viaduct, the materials for which were obtained from the quarry in question. It is believed that red granite, suitable for ornamental work, may be found there. Facilities for the works will be afforded by the Port Patrick Railway Company. Plans may be seen at the Caily Office, Gatehouse.—Offers to be sent in writing to H. J. Moule, Esq., Gatehouse, from whom further particulars may be obtained.

FOR SALE, the RIGHT to the PATENT of a VALUABLE IMPROVEMENT in VALVES and BUCKETS for PUMPS, and in VALVES or COCKS for OTHER USES.—For particulars, apply to Mr. W. T. Rawle, patent and mining agent, 39, Budge-street, Bristol.

WIRE ROPES FOR SALE, BY PRIVATE CONTRACT.—ONE WIRE ROPE, 196 fms. long; EIGHT ditto, each 183 fms. long; and TWO ditto, each 116 fms. long; all 4¾ in. circumference, weighing 22 lbs. per fm., and made of the best charcoal iron wire, by Messrs. Glass, Elliott, and Co.—Applications to be addressed Messrs. Cochrane, Grove, and Co., Clifton Suspension Bridge Works, Bristol, where every information can be obtained.

MARINE STEAM ENGINES FOR SALE.—TO BE SOLD, ONE PAIR of FIRST-CLASS MARINE PADDLE side lever ENGINES, of 400 nominal horse power, cylinders 73 in. diameter and 6 ft. stroke, malleable iron side levers and framing, brass steam and expansion valves and facings, brass air pumps, air pump buckets and valves, copper steam, feed, blow-off, and injection pipes. These engines are of first-class workmanship, and were only used about six years, during which time they were working in Her Majesty's Mail Service in the Pacific.—Address, "A. B.," Mining Journal office, 26, Fleet-street, London, E.C.

NEW COMBINED TURBINE, WINDING, AND PUMPING MACHINERY,
MANUFACTURED by GEORGE LOW,
MILLGATE IRONWORKS, NEWARK-UPON-TRENT,

Who respectfully begs to bring the above to the notice of the mining public, as an exceedingly cheap and easy method of applying water-power for the above purposes.
The TURBINE, WINDING, and PUMPING MACHINERY are all fixed complete to one strong cast-iron bed plate, which can be placed in any situation without pit or excavation, and any height not exceeding 33 ft. from bottom of fall, the supply and suction pipe being all that is required to be connected to it, and can be brought in any direction. This combined machine can be easily removed when necessary.
G. Low begs also to state that the TURBINE is the most efficient and the cheapest method of applying water-power for mining purposes.
MANUFACTURER of WINDING, PUMPING, CRUSHING, STAMPING MACHINERY, WINDING ENGINES, WATER WHEELS.
IMPROVED TURBINE WATER WHEELS CONSTRUCTED either to WORK VERTICALLY or HORIZONTALLY, and upon the MOST SCIENTIFIC and EFFECTIVE PRINCIPLE.
G. Low begs to recommend a special class of turbine adapted for extreme high falls (200 to 500 ft.), and consuming small quantity of water. This turbine will work with equal advantage without running at an excessive velocity. Also,
MANUFACTURER of IMPROVED BORING MACHINES for DRIVING ADITS.

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Author of the "Combustion of Coal Chemically and Practically Considered."
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Address Mr. J. J. Campbell, Cropper's-hill, St. Helen's; or the author, 73, Peter-street, St. Helen's.

BRITISH AND FOREIGN INVESTMENT.—Mr. THOMAS SPARGO, STOCK, SHARE, AND MINING BROKER, 224 and 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C., TRANSACTS EVERY DESCRIPTION of BUSINESS in the PURCHASE and SALE of SHARES in BANKS, CANALS, MINES, RAILWAYS, BRIDGES, INSURANCES, and ALL OTHER DESCRIPTIONS of BRITISH and FOREIGN STOCK.
Mr. Spargo has for sale shares in English mines paying from 10 to 20 per cent. upon the present price, in bi-monthly and quarterly dividends, as also a number of shares in good progressive mines, some of which he with confidence specially recommends to the public as sound investments.
Mr. Spargo gives every information as to position and prospects of all mining undertakings, upon application, either personally or by letter, and is enabled, through his long experience, aided by his monthly visits to Cornwall, Devon, and Wales, to obtain the most reliable information as to the numerous mines in those districts. He will, at all times give the best advice as to investment in mines, and, if necessary, inspect them himself; as in all cases he wishes to be guided by the intrinsic value of the property. Upon the receipt of 5s. he will furnish a selected list of dividend and progressive companies.
Mr. Spargo has published the following works, viz.:—

| | | |
|---|---|---|
| Statistics and Observations upon the Mines of Cornwall, 1859, price 2s. 6d. | | |
| Ditto | ditto | 1860, price 2s. 6d. |
| Ditto | ditto | 1862, price 5s. |
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Physical, Geological, and Parish Map of Cornwall. Scale, three miles to an inch. Printed in three colours, showing distinctly the mining districts, the height of the hills, &c. Price 10s. 6d., on cloth and rollers.
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Dividends received, calls paid, and all orders promply negociated.
Commission 1¼ per cent.
Mr. Spargo has 20 years' experience of mining, ten of which he was engaged in practical mining, and ten years he has transacted business in mining shares and stock, at 224 and 225, Gresham House, Old Broad-street, City, E.C.
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MESSRS. ROBERTS AND CO.'S PRICE LIST AND STOCK AND SHARE REPORTER contains Reports of Mines, Notices of Meetings, Plans of Mining Districts (showing the position of progressive mines in reference to those returning large profits), Railway Meetings, Joint-Stock Companies Intelligence, and Advice as to the Purchase and Sale of Stock.—87, London-wall, E.C.

**CLAYTON, SHUTTLEWORTH, AND CO.,**
ENGINEERS,
MANUFACTURERS of PORTABLE and FIXED STEAM ENGINES, MACHINERY for PUMPING, HOISTING, GRINDING, SAWING, &c., ENGINES for STEAM CULTIVATION, SELF MOVING ENGINES for COMMON ROADS and AGRICULTURAL PURPOSES GENERALLY,
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LOWENGASSE No. 41, LANDSTRASTE, VIENNA, and GEGENUBER DEM BAHNHOF, PESTH.
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SPECIAL DRAWINGS WHEN REQUIRED.
THE BEST STEAM THRASHING MACHINERY MADE.

**Exhibition Medal, 1862.**

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CONSISTING OF
PLATFORM WEIGHING MACHINES and HIND'S PATENT RAIL and ROAD WEIGHBRIDGES, overhead TRAVELLING WEIGHING CRANES and CRABS, RAILWAY WEIGHING TURNABLES, &c.
**CRANES**
Of the WALL, PILLAR, PORTABLE, or TRAVELLING KINDS; and CRABS and WINCHES for STEAM or HAND POWER, &c. Also, TURNTABLES, WATER COLUMNS, TANKS, and PUMPING MACHINERY, and GENERAL RAILWAY PLANT, manufactured by
RICHARD KITCHIN, ENGINEER AND IRONFOUNDER,
SCOTLAND BANK IRONWORKS, WARRINGTON.

**Swan Rope Works.**

**GARNOCK, BIBBY, AND CO.,**
CHAPEL STREET, LIVERPOOL,
MANUFACTURERS of FLAT and ROUND HEMP and IRON and STEEL WIRE ROPES for MINING, RAILWAY, and SHIPPING PURPOSES.
MANILLA ROPE of SUPERIOR QUALITY, FIFTY PER CENT. STRONGER, and THIRTY PER CENT. CHEAPER than Russian hemp rope.
WIRE ROPE of FIRST QUALITY WIRE, and the HIGHEST STANDARD of STRENGTH.

**First Class Silver Medal, Royal Polytechnic Society, Falmouth, 1864.**

**CREASE'S PNEUMATIC TUNNELLING ENGINE,**
for SUPERSEDING the SLOW and EXPENSIVE USE of MANUAL LABOUR in SINKING SHAFTS, DRIVING LEVELS, TUNNELLING, &c., is guaranteed to drive through any rock of average hardness at a minimum rate of 1 fm. per diem, and to sink shafts at the rate of 2 fms. in three days.
Mr. CREASE will undertake contracts for sinking shafts, driving levels, &c., at an enormous reduction of time and great saving in cost.
Applications to be addressed (for the present) to the patentee, Mr. E. S. CREASE, Tavistock, Devon.

**Prize Medal Awarded Great Exhibition, 1851, and International Exhibition, 1862.**

**PATENT SAFETY FUZE WORKS, TUCKINGMILL,**
CORNWALL.—We beg respectfully to inform the public that since the decease of the late Mr. THOMAS DAVEY this firm has consisted of JOHN SOLOMON BICKFORD, GEORGE SMITH, FRANCIS PRYOR, SIMON DAVEY, and WILLIAM BICKFORD SMITH. It is requested that all letters may be addressed, and all cheques and drafts made payable to us, as
BICKFORD, SMITH, AND CO.

**THE UNITY PATENT SAFETY FUSE COMPANY**
SCORRIER, CORNWALL, SOLICIT ORDERS for the DIFFERENT KINDS of SAFETY FUSE which they are PREPARED to SUPPLY, of SUPERIOR QUALITY, and of ANY LENGTH.

**Gun Cotton Manufactory.**

**MESSRS. THOMAS PRENTICE AND CO.,**
GREAT EASTERN CHEMICAL WORKS, STOWMARKET, SUFFOLK.
This manufactory has been established for the purpose of preparing GUN COTTON, according to the Austrian process, and was opened on the 26th of January last, under the inspection of Baron Lenk. Messrs. Thomas Prentice and Co. are now able to SUPPLY GUN COTTON, in its most approved form, either for the purposes of engineering and mining, or for military and submarine explosion, and for the service of artillery, as a substitute for gunpowder.
The advantages of Baron Lenk's GUN COTTON are the following:—
FOR PURPOSES OF ARTILLERY.—The same initial velocity of the projectile can be obtained by a charge of gun cotton one-fourth of the weight of gunpowder. There is no smoke from the explosion of gun cotton; it does not foul the gun, nor heat it to the injurious degree of gunpowder. There is much smaller recoil of the gun. The same initial velocity of projectile is produced, with a shorter length of barrel. In projectiles of the nature of explosive shells it breaks the shell more equally into much more numerous pieces than gunpowder. When used in shells, one-third the weight of gun cotton produces double the explosive force of gunpowder.
FOR CIVIL ENGINEERING AND MINING.—In driving tunnels through hard rock a charge of gun cotton of given size exerts double the explosive force of gunpowder, thus a smaller number of holes is necessary. It may be so used as, in its explosion, to reduce the rock to much smaller pieces than gunpowder, and so facilitate its removal. As gun cotton produces no smoke, the work can proceed much more rapidly, and with less injury to the health of the miners. In working coal mines the advantages of bringing down much larger quantities of material with a given charge, and the absence of smoke in the explosion, enable a much greater quantity of work to be done in a given time at a given cost. The weight of gun cotton required to produce a given effect in mining is only one-sixth part of the weight of gunpowder. In blasting rock under water the wider range and greater force of a given charge is a great element in cheapening the cost of submarine work. The peculiar local action of gun cotton, to which the effects of gunpowder show no analogy, enables the engineer to destroy and remove submarine stones and rocks, without the preliminary delay and expense of boring chambers for the charge.
FOR MILITARY ENGINEERING.—The facility of transport is increased, the weight of gun cotton being one-sixth that of gunpowder. The peculiar localised action of gun cotton facilitates the destruction of bridges and palisades, and every obstacle. For submarine explosion, gun cotton has the advantage of a much wider range of destructive power than gunpowder. For the same purpose gun cotton, from its lightness, has the advantage of keeping afloat the water-tight case in which it is contained, while gunpowder sinks it to the bottom.
FOR NAVAL WARFARE.—In the batteries of ships, between decks, and in casemated forts, the absence of smoke facilitates continuous rapid firing. The absence of fouling and of heating are equally advantageous for naval as for military artillery.
GENERAL ADVANTAGES.—Time, damp, and exposure do not alter the qualities of the patent gun cotton. It has already been preserved 10 years without injury or decay. It can be transported through fire without danger, simply by being wetted, and when dried in the open air it becomes as good as before. In the case of a ship, or a fortress, or a city being on fire, this quality may be of the greatest value. It is much safer than gunpowder, owing to its being manufactured in the shape of rope or yarn. It cannot escape from its package, or be spilled by accident. The patent gun cotton is entirely free from the danger of spontaneous combustion, and secures that degree of safety and certainty which, at the time of the original invention, the gun cotton of Schönbein did not possess.
Messrs. THOMAS PRENTICE and Co. are now in a position to contract with the owners of mines, engineers, contractors, and governments for gun cotton prepared in the various forms required for their use. Mining charges will be supplied in the rope form, according to the diameters of bore required, and gun cotton match-line, as well as instructions for using it in mines, will be supplied with it.
The great advantage of gun cotton make its use in practice very much cheaper than its comparative price would appear to show; in blasting rock, for example, the rapidity and quantity of the work done, with a given expense of wages, &c., is largely in favour of gun cotton.
Messrs. THOMAS PRENTICE and Co. are also prepared to manufacture the gun cotton, and deliver it in the form of gun cartridges, adapted to every description of ammunition; all they require for this purpose being a drawing of the gun, gunpowder cartridges, and ammunition, with the specification of weights, sizes, and initial velocities.
Artillerists who prefer to manufacture their own cartridges may make special arrangements with the patentee through Messrs. PRENTICE and Co.
Stowmarket, March 10, 1864.

THE BANKING, MINING, AND JOINT-STOCK COMPANIES REVIEW,
A JOURNAL OF COMMERCE, TRADE AND MANUFACTURE,
SCIENCE AND THE ARTS.
Published every Wednesday. Subscription, £1 1s. annually. Price 6d. stamped.
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Capitalists who seek safe and profitable investments, free from risk, should act only upon the soundest information. The market prices for the day are for the most part governed by the immediate supply and demand, and the operations of speculators, without reference to the *bona fide* merits of the property. Railways depend upon the traffic, expenditure, and capital accounts, the probabilities of alliance or competition with neighbouring companies, the creation of new shares, the state of the money market as affecting the renewal of debentures, and other considerations founded on data to which those only can have access who give special attention to the subject. Mines afford a wider range for profit than any other public securities. The best are free from debt, have large reserves, and pay dividends bi-monthly varying from £16 to £25 per cent. per annum. Instances frequently occur of young mines rising in value 400 or 500 per cent. But this class of security, more than any other, should be purchased only upon the most reliable information. The undersigned devote special attention to railways and mines, afford every information to capitalists, and effect purchases and sales upon the best possible terms. Thirty years' experience in mining pursuits justifies us in offering our advice to the uninitiated in selecting mines for investment; we will, therefore, forward, upon receipt of Post-office order for 5s., the names of six dividend and six progressive companies that will, in our opinion, well repay capitalists for money employed.
Messrs. TREDINNICK AND CO., STOCK and SHAREBROKERS, and DEALERS IN BRITISH MINING SHARES, 78, LOMBARD STREET, E.C.

**THE NEWCASTLE CHRONICLE AND NORTHERN COUNTIES ADVERTISER.** (ESTABLISHED 1764).
Offices, 42, Grey-street, Newcastle-upon-Tyne; 50, Howard-street, North Shields; 195, High-street, Sunderland.

FOR GRATUITOUS CIRCULATION.
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**DR. WATSON, F.R.A.S.** (of the Lock Hospital, and College of Physicians and Surgeons) on the Self Cure of Nervous and Physical Debility, Spermatorrhœa, Decline of Manly Vigour, and Diseases of Indiscretion, with Means for Perfect Restoration, free for six stamps, by Dr. WATSON, 1, South-crescent, Bedford-square, London. Consultation daily from Eleven till Two and Six till Eight. Sunday, 2to till Twelve.

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ALL ORDERS FOR ABROAD RECEIVE their BEST ATTENTION. NICHOLLS, WILLIAMS, and Co. have had 20 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, where required.
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Machinery sent to all parts of the world.
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Gentlemen, farmers, and others applying direct to the works will be liberally treated.
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**THE MIDLAND WAGON COMPANY.**
ESTABLISHED 1853.
RAILWAY WAGONS.—This company having from SIX to SEVEN THOUSAND COAL, COKE, IRONSTONE, and BALLAST WAGONS, have generally a number TO LET for one or more years, including repairs, at Rugby, Peterboro', Shrewsbury, Chester, Carnforth, Stoke-on-Trent, Staveley, Droitwich, Worcester, Gloucester, Reading, Hereford, Newport (Mon.), Cardiff, and Birmingham.
They also CONTRACT for WAGON REPAIRS at any of the above stations.
The company BUILD EVERY DESCRIPTION of RAILWAY WAGONS and CARRIAGES for CASH, or by DEFERRED PAYMENTS, extending over three, five, seven, or ten years.
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**COAL CUTTING MACHINERY.**—The WEST ARDSLEY COMPANY having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY to MAKE CONTRACTS for the CONSTRUCTION and USE of their MACHINES.
The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN the COST and IMPROVE the average SIZE of the COAL, to LIGHTEN the LABOUR, and also to MODIFY the SANITARY CONDITION of the MINE.
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**NOTICE.**—The WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, or USE ANY MACHINERY in the construction of which any such INFRINGEMENT is MADE.

**EDWARDS'S PATENT MINERAL ORE AND COAL WASHING MACHINE.**—This is by far the MOST ECONOMICAL, as well as the MOST PERFECT MACHINE MADE. Each machine is capable of washing 25 to 50 tons per diem, according to quality.—Full particulars, testimonials, &c., may be obtained from E. EDWARDS, Esq., C.E., 1, York-buildings, Adelphi, where a working model may be seen.

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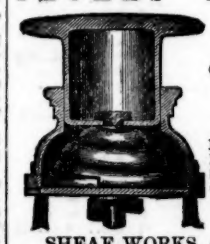
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IMPROVED BLACK VARNISH,
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**TURPENTINE SUBSTITUTE.**
GLOVER and Co. have now on hand a really splendid painting sample of spirits of turpentine substitute, a pure crystal, not more volatile than the genuine American turpentine, and quite inoffensive to smell. Price, 2s. per gallon, in 30-gallon casks.

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This oil gives a pure, white, soft, and brilliant light, easily regulated, and portable. For works or public buildings, where gas is not desirable, the brilliancy and economy of the article are unequalled.

**WASTE NO OIL.**
STRONG IRON OIL CISTERNS.
Not liable to leak, and which economise space in the stores. From 600 gallons, 48 diameter by 84 in height, price £10 10s., down to 10 gallons, 15 diameter by 21 in height, price 15s., WITH EVERY VARIETY OF SIZE AND PRICE BETWEEN.
STRONG IRON BUCKETS:—
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APPARATUS FOR RAISING WATER ECONOMICALLY, ESPECIALLY APPLICABLE TO ALL KINDS OF MINES, DRAINAGE, WELLS, MARINE, FIRE, &c.
J. U. BASTIER begs to call the attention of proprietors of mines, engineers, architects armers, and the public in general, to his new pump, the cheapest and most efficient ever introduced to public notice. The principle of this new pump is simple and effective, and its action is so arranged that accidental breakage is impossible. It occupies less space than any other kind of pump in use, does not interfere with the working of the shafts, and unites lightness with a degree of durability almost imperishable. By means of this hydraulic machine water can be raised economically from wells of any depth; it can be worked either by steam-engine or any other motive power, by quick or slow motion. The following statement presents some of the results obtained by this hydraulic machine, as daily demonstrated by use:—
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2.—Its price and expense of installation is 75 per cent. less than the usual pumps employed for mining purposes.
3.—It occupies a very small space.
4.—It raises water from any depth with the same facility and economy.
5.—It raises with the water, and without the slightest injury to the apparatus, sand, mud, wood, stone, and every object of a smaller diameter than its tube.
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J. U. BASTIER, sole manufacturer, will CONTRACT to ERECT his PATENT PUMP at HIS OWN EXPENSE, and will GUARANTEE IT FOR ONE YEAR, or will GRANT LICENSES to manufacturers, mining proprietors, and others, for the USE of his INVENTION.
OFFICES, 12, GOWER STREET NORTH, LONDON.
London, March 21, 1859. Hours from Ten till Four. J. U. BASTIER C.E.

**International Exhibition, 1862—Prize Medal.**

**JAMES RUSSELL AND SONS** (the original patentees and first makers of wrought-iron tubes), of the CROWN PATENT TUBE WORKS, WEDNESBURY, STAFFORDSHIRE, have been AWARDED a PRIZE MEDAL for the "good work" displayed in their wrought-iron tubes and fittings.
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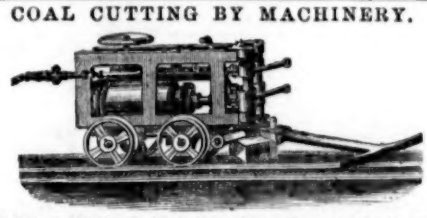
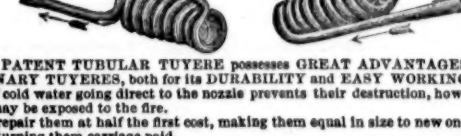
The company have recently introduced CRUCIBLES SPECIALLY ADAPTED for the following purposes, viz.:—MALLEABLE IRON MELTING, the average working of which has proved to be about seven days; STEEL MELTING, which are found to save nearly 1¼ ton of fuel to every ton of steel fused; and for ZINC MELTING, lasting much longer than the ordinary iron pots, and saving the great loss which arises from mixture with iron.
For lists, testimonials, &c., apply to the Patent Plumbago Crucible Company, Battersea Works, London, S.W.
Fully described in the MINING JOURNAL of July 5.

**COAL CUTTING BY MACHINERY.**

**MESSRS. RIDLEY AND CO.** have, by recently PATENTED IMPROVEMENTS, COMPLETED their TRUNK COAL CUTTING MACHINE, WORKED by COMPRESSED AIR, and are NOW PREPARED to NEGOCIATE for the USE, and to SUPPLY MACHINES, which will be found to COMBINE SIMPLICITY of CONSTRUCTION with PORTABILITY and ECONOMY in WORKING. By the use of these machines a CONSIDERABLE SAVING of COAL is EFFECTED, and the COST of LABOUR MUCH REDUCED. Each machine will be guaranteed as to its capabilities, &c.
All applications to be made to Messrs. RIDLEY and Co., No. 11, South-street, Finsbury London, E.C.; or Mr. PERCY BANKART, agent, 9, Clement's-lane, E.C.
*** COLLIERY PROPRIETORS are CAUTIONED against PURCHASING or USING MACHINES, the construction of which will constitute an INFRINGEMENT of the ABOVE PATENT.

**MESSRS. KNOWLES AND BUXTON, CHESTERFIELD.**
MANUFACTURERS OF PATENT TUBULAR TUYERES.

The PATENT TUBULAR TUYERE possesses GREAT ADVANTAGES over the ORDINARY TUYERES, both for its DURABILITY and EASY WORKING. A current of cold water going direct to the nozzle prevents their destruction, however much they may be exposed to the fire.
We repair them at half the first cost, making them equal in size to new ones, all parties returning them carriage paid.

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| No. 1 tuyere, | 16 | in. | long | 28s. each. |
| No. 2 " | 18 | " | " | 32s. " |
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| No. 4 " | 22 | " | " | 40s. " |
| No. 5 " | 24 | " | " | 44s. " |

Delivered at Chesterfield station. Terms, nett cash quarterly.

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RAILWAY SAW MILLS, MOULDING SHOPS, &c., AND GENERAL TIMBER CONVERTING YARDS,
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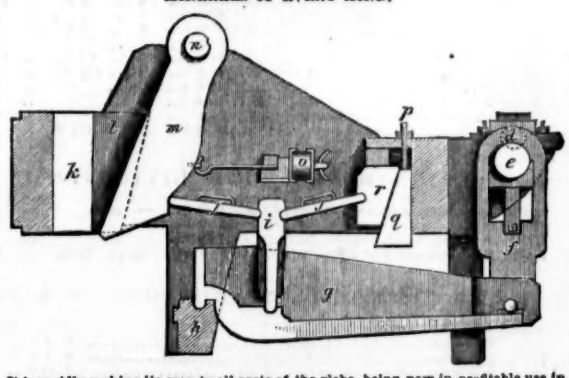
**BLAKE'S PATENT STONE BREAKER,**
OR ORE CRUSHING MACHINE,
FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.


It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England.
The above section illustrates Blake's Stone Breaker, just as made the last five years, and is fully protected in every part by patents.
Extract from Specification:—A short but powerful vibration is imparted to one or both of the jaws by any convenient arrangement, and combination of powerful levers, worked by a crank or eccentric on the main shaft.
LEGAL PROCEEDINGS will be taken at once against any person or persons found making, using, or vending any machine, the construction of which will constitute an infringement on the above patent. Read extracts of testimonials:—
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*Welsh Gold Mining Company, Dolgelly.*—The stone breaker does its work admirably, crushing the hardest stones and quartz. WM. DANIEL.
Our 15 by 7 in. machine has broken 4 tons of hard winstone in 20 minutes, for fine road metal, free from dust. Messrs. ORD and MADDISON, Stone and Lime Merchants, Darlington.
*Kirkless Hall, near Wigan.*—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton. JOHN LANCASTER.
*Ovoca, Ireland.*—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour. WM. G. ROBERTS
*General Frémont's Mines, California.*—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or $75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate. SILAS WILLIAMS
For circulars and testimonials, apply to—
H. R. MARSDEN, SOHO FOUNDRY,
MEADOW LANE, LEEDS.
Only maker in the United Kingdom.

# THE MINING SHARE LIST

## BRITISH DIVIDEND MINES.

| Shares. | Mines. | Paid. | Last Pr. | Business. | Dividends | Per Share. | Last paid. |
|---|---|---|---|---|---|---|---|
| 1200 | Alderley Edge (cop.), Cheshire [L.] | 10 0 0 | — | | 10 8 0 | 0 15 0 | April, 1864 |
| 4000 | Bedford United (copper), Tavistock† | 2 6 8 | 2⅜ | 2¼ 2⅜ | 13 11 6 | 0 2 6 | Oct. 1864 |
| 1248 | Boscaswell (tin, copper), St. Just | 6 15 0 | — | | 1 5 0 | 0 5 0 | May, 1864 |
| 200 | Botallack (tin, copper), St. Just | 91 5 0 | — | | 477 15 0 | 3 0 0 | May, 1864 |
| 5000 | Bronfloyd (lead), Cardigan [L. £3] | 2 7 6 | — | | 0 19 0 | 0 2 6 | April, 1864 |
| 916 | Cargoll (silver-lead), Newlyn | 15 5 7 | 38 | 36 38 | 8 10 0 | 0 15 0 | Aug. 1864 |
| 1600 | Carn Brea (copper, tin), Illogan | 15 0 0 | — | | 280 10 0 | 2 0 0 | June, 1864 |
| 2900 | Clifford Amalgamated (cop.), Gwen. | 30 0 0 | 31 | 30 31 | 32 18 6 | 0 10 0 | Oct. 1864 |
| 12000 | Copper Miners of England | 25 0 0 | — | | 7½ per cent. | | Half-yrly. |
| 40000 | Ditto ditto (stock) | 100 0 0 | — | | 1 per cent. | | Half-yrly. |
| 867 | Cwm Erfin (lead) Cardiganshire [L.] | 7 10 0 | — | | 12 18 0 | 0 15 0 | Oct. 1864 |
| 128 | Cwmystwith (lead), Cardiganshire* | 60 0 0 | — | | 271 10 0 | 4 0 0 | Sept. 1864 |
| 280 | Derwent Mines (sil.-lead), Durham | 300 0 0 | — | | 152 0 0 | 5 0 0 | June, 1864 |
| 1024 | Devon Gt. Con. (cop.), Tavist.* [S.E.] | 1 0 0 | 600 | 580 600 | 933 0 0 | 10 0 0 | Sept. 1864 |
| 358 | Dolcoath (copper, tin), Camborne* | 128 17 6 | — | | 775 10 0 | 6 0 0 | Oct. 1864 |
| 12800 | Drake Walls (tin, copper), Calstock | 2 1 0 | — | ¾ 1 | 0 18 0 | 0 1 6 | May, 1863 |
| 512 | East Basset (cop.), Redruth [S.E.]* | 29 10 0 | 58 | 52½ 57½ | 125 0 0 | 2 0 0 | Sept. 1864 |
| 6144 | East Caradon (copper), St. Cleer [S.E.] | 2 14 6 | 24½ | 22 23 | 12 2 0 | 0 17 0 | Oct. 1864 |
| 300 | East Darren (lead), Cardiganshire* | 32 0 0 | — | | 101 10 0 | 2 0 0 | Oct. 1864 |
| 128 | East Pool (tin, copper), Pool, Illogan | 24 5 0 | — | | 369 10 0 | 4 0 0 | June, 1864 |
| 5000 | East Rosewarne (cop., tin), Gwinear | 2 15 0 | — | 2⅝ 3⅛ | 0 2 6 | 0 2 6 | Sept. 1864 |
| 1906 | East Wheal Lovell (tin), Wendron | 2 13 6 | 12 | 10 11 | 1 10 0 | 0 10 0 | May, 1864 |
| 2800 | Foxdale (lead) Isle of Man [L.] | 25 0 0 | — | | 64 0 0 | 1 0 0 | June, 1864 |
| 6000 | Frank Mills (lead), Christow | 3 18 6 | — | | 1 9 6 | 0 5 0 | Aug. 1864 |
| 12000 | Great Laxey (lead), Isle of Man [L.] | 4 0 0 | 16 | 16 17 | 1 1 0 | 0 10 0 | Sept. 1864 |
| 1798 | Great Wheal Fortune (tin), Breage | 18 6 0 | 8 | 6 8 | 5 15 0 | 0 10 0 | Nov. 1863 |
| 5908 | Great Wh. Vor (tin, cp.), Helston [S.E.] | 40 0 0 | 31½ | 35 36 | 4 12 0 | 0 12 6 | Sept. 1864 |
| 119 | Great Work (tin), Germoe | 100 0 0 | — | | 15 0 0 | 5 0 0 | Aug. 1864 |
| 1024 | Herodsfoot (ld.), near Liskeard [S.E.] | 8 10 0 | 39 | | 29 15 0 | 1 15 0 | Oct. 1864 |
| 400 | Lisburne (lead), Cardiganshire, Wales* | 18 15 0 | — | | 427 10 0 | 3 0 0 | Oct. 1864 |
| 2000 | Maes-y-Safn (lead) [L] | 20 0 0 | — | | 1 0 0 | 1 0 0 | Oct. 1864 |
| 8000 | Marke Valley (copper), Caradon | 4 10 6 | 4½ | 4 4½ | 2 15 6 | 0 1 6 | Oct. 1864 |
| 3000 | Minera Boundary (lead), Wrexham [L.] | 1 0 0 | — | | 0 2 0 | 0 2 0 | Aug. 1864 |
| 1800 | Minera Mining Co. [L.], (ld.), Wrexham | 25 0 0 | — | | 155 18 0 | 10 0 0 | Aug. 1864 |
| 20000 | Mining Co. of Ireland (cop., lead, coal) | 7 0 0 | 28 | 28¼ 28¾ | 16 19 7 | 0 12 3 | Jan. 1864 |
| 40000 | Mwyndy (iron ore) [L. £4] [S.E.] | 2 10 0 | — | | 0 4 0 | 0 2 0 | April, 1864 |
| 250 | Nanty Mines (lead), Montgomery | 20 0 0 | — | | 7 0 0 | 1 0 0 | June, 1864 |
| 6000 | New Birch Tor and Vitifer Cons. (tin) | 1 6 6 | 2¼ | 2¼ 2¼ | 0 11 0 | 0 1 6 | Oct. 1864 |
| 5936 | North Treskerby (copper), St. Agnes | 1 9 0 | 3 | 2⅝ 2⅞ | 0 13 0 | 0 2 6 | Feb. 1864 |
| 6400 | Par Consols (cop.), St. Blazey [S.E.] | 1 2 6 | — | | 36 19 0 | 0 2 6 | Mar. 1863 |
| 200 | Parys Mines (copper), Anglesey [L.] | 50 0 0 | — | | 112 10 0 | 10 0 0 | July, 1864 |
| 1772 | Polberro (tin), St. Agnes | 15 0 0 | — | | 7 19 6 | 0 10 0 | Nov. 1863 |
| 512 | Polbreen (tin), St. Agnes | 8 0 0 | — | | 1 0 0 | 1 0 0 | July, 1863 |
| 1123 | Providence (tin), Uny Lelant† [S.E.] | 10 6 7 | 38 | 34 36 | 74 5 0 | 1 0 0 | Aug. 1864 |
| 6000 | Rosewall Hill and Ransom United | 2 16 0 | — | | 0 10 0 | 0 1 6 | June, 1863 |
| 512 | South Caradon (cop.), St. Cleer* [S.E.] | 1 5 0 | — | 520 540 | 452 10 0 | 7 0 0 | Sept. 1864 |
| 512 | South Tolgus (cop.), Redruth, Cornwall* | 8 0 0 | — | | 74 10 0 | 1 0 0 | May, 1863 |
| 496 | S. Wh. Frances (cop.), Illogan* [S.E.] | 18 18 9 | — | 33 35 | 370 13 6 | 1 0 0 | Nov. 1863 |
| 4000 | St. Day United (tin), Redruth | 14 0 0 | — | | 0 5 0 | 0 5 0 | Mar. 1864 |
| 940 | St. Ives Consols (tin), St. Ives | 8 0 0 | — | | 490 10 0 | 0 10 0 | May, 1864 |
| 6000 | Tincroft (cop. tin), Pool, Illogan [S.E.] | 9 0 0 | 16 | 15½ 16½ | 15 11 0 | 0 10 0 | Sept. 1864 |
| 4200 | Vigra and Clogau (copper) [L. £5] | 4 0 0 | — | | 6 2 6 | 1 10 0 | Mar. 1864 |
| 6000 | West Basset (copper), Illogan [S.E.] | 1 10 0 | 8½ | 8 9 | 25 13 0 | 0 5 0 | July, 1864 |
| 3000 | W. Chiverton, (ld.), Perranzabuloe [S.E.] | — | 60 | 55 60 | 3 0 0 | 0 15 0 | Aug. 1864 |
| 256 | West Damsel (copper), Gwennap | 38 10 0 | — | | 52 10 0 | 1 10 0 | Sept. 1864 |
| 400 | W. Wh. Seton (cop.), Camborne [S.E.]* | 47 10 0 | 220 | 210 220 | 417 0 0 | 4 0 0 | Oct. 1864 |
| 512 | Wheal Basset (copper), Illogan* [S.E.] | 5 2 6 | 92½ | 90 92 | 603 0 0 | 1 10 0 | Oct. 1864 |
| 1000 | Wheal Basset and Grylls (tin) | 7 0 0 | — | | 3 0 0 | 0 10 0 | Oct. 1863 |
| 512 | Wheal Jane (silver-lead), Kea | 3 10 0 | — | | 15 0 0 | 0 10 0 | Aug. 1864 |
| 4295 | Wheal Kitty (tin), St. Agnes | 5 4 6 | — | 5 | 1 18 6 | 0 5 0 | Aug. 1864 |
| 1024 | Wheal Kitty (tin), Uny Lelant [S.E.] | 2 0 6 | — | | 10 2 6 | 0 7 6 | July, 1864 |
| 1024 | Wh. Mary Ann (ld.), Menheniot [S.E.] | 8 0 0 | 17 | 15½ 16½ | 58 17 6 | 0 10 0 | Sept. 1864 |
| 100 | Wheal Mary (tin), Lelant | 36 2 6 | — | | 288 5 0 | 4 0 0 | Mar. 1861 |
| 80 | Wheal Owles (tin), St. Just, Cornwall | 70 0 0 | — | | 343 3 0 | 5 0 0 | May, 1864 |
| 396 | Wheal Seton (tin, copper), Camborne | 58 10 0 | 205 | 190 200 | 183 15 0 | 4 0 0 | Oct. 1864 |
| 1040 | Wh. Trelawny (sil.-ld.), Liskeard [S.E.] | 5 17 0 | 20 | 19 20 | 50 5 0 | 0 12 6 | Aug. 1864 |
| 2044 | Wheal Tremayne (tin), Gwinear | 6 11 3 | — | | 6 1 3 | 0 5 0 | Nov. 1863 |
| 7000 | Wicklow (copper) [L.], Wicklow | 2 10 0 | — | 12¾ 13 | 14 11 0 | 0 6 0 | April, 1864 |

[* Dividends paid every two months. † Dividends paid every three months.]

## BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

| Shares. | Mines. | Paid. | Last Pr. | Business. | Dividends | Per Share. | Last paid. |
|---|---|---|---|---|---|---|---|
| 240 | Boscean (tin), St. Just | 20 10 0 | — | | 36 10 0 | 1 0 0 | Mar. 1862 |
| 3000 | Chiverton (lead), Perranzabuloe [S.E.] | 6 0 0 | 6 | 5¾ 6¼ | — | — | — |
| 256 | Condurrow (cop., tin), Camborne | 76 10 0 | — | | 85 0 0 | 2 0 0 | June, 1857 |
| 2450 | Cook's Kitchen (copper), Illogan | 18 5 9 | 13 | 11½ 12½ | 1 7 0 | 0 7 0 | May, 1862 |
| 1024 | Copper Hill (copper), Redruth | 12 0 0 | — | | 2 7 6 | — | Sept. 1862 |
| 1055 | Craddock Moor (copper), St. Cleer | 8 0 0 | — | | 7 12 0 | 0 4 0 | July, 1862 |
| 4076 | Devon and Cornwall (cop.), Tavistock | 6 6 3 | — | | 0 10 0 | 0 2 6 | Feb. 1859 |
| 3000 | Dyfngwm (lead), Wales | 12 6 6 | — | | 0 17 6 | 0 2 6 | Jan. 1863 |
| 940 | Fowey Consols (copper), Tywardreath | 4 0 0 | — | | 41 9 3 | 0 2 6 | June, 1860 |
| 6000 | Great South Tolgus, Redruth | 0 14 6 | — | | 7 18 6 | 0 5 0 | Dec. 1861 |
| 10240 | Gunnis Lake (Clitters' Adit) | 0 2 0 | — | | 0 3 0 | 0 1 6 | Mar. 1862 |
| 160 | Levant (copper, tin), St. Just | 2 10 0 | — | | 1091 0 0 | 5 0 0 | May, 1860 |
| 640 | Mount Pleasant (lead), Mold | 4 0 0 | — | | 18 18 1 | 0 7 6 | Aug. 1862 |
| 5000 | Orsedd (lead), Flintshire | 0 0 8 | — | | 0 10 4 | 0 0 8 | Mar. 1862 |
| 5000 | South Exmouth (lead), Christow | 1 14 0 | — | | 0 5 0 | 0 5 0 | Dec. 1862 |
| 280 | Spearne Moor (tin, copper), St. Just | 32 17 9 | — | | 9 15 0 | 1 0 0 | June, 1862 |
| 572 | Trelyon Consols (tin), St. Ives | 14 0 0 | — | | 7 0 0 | 0 10 0 | Sept. 1860 |
| 1000 | Trumpet Consols (tin), near Helston | 11 10 0 | — | | 11 0 0 | 2 0 0 | Mar. 1862 |
| 12000 | Twelve Apostles Amal. (ld.), Wrexham | 1 0 0 | — | | — | — | — |
| 1024 | Wendron Consols (tin), Wendron | 19 13 10 | 1⅛ | | 8 15 0 | 1 0 0 | Jan. 1861 |
| 60 | West Burton Gill (lead), Yorkshire | 50 0 0 | — | | 14 10 0 | 3 0 0 | June, 1861 |
| 1024 | West Caradon (cop.), Liskeard [S.E.] | 7 0 0 | 7 | 6½ 7 | 101 1 3 | 0 10 0 | Oct. 1862 |
| 1024 | Wheal Friendship (copper), Devon | 20 0 0 | — | | 295 10 0 | 5 0 0 | Feb. 1861 |
| 896 | Wheal Margaret (tin), Uny Lelant | 10 17 6 | 9 | | 76 5 0 | 1 0 0 | May, 1863 |
| 6400 | West Fowey Consols (tin and copper) | 7 10 0 | — | | 0 19 0 | 0 3 0 | May, 1862 |

## FOREIGN DIVIDEND MINES.

| Shares. | Mines. | Paid. | Last Pr. | Business. | Dividends | Per Share. | Last paid. |
|---|---|---|---|---|---|---|---|
| 20000 | Australian (cop.), S. Australia [S.E.] | 7 7 6 | — | | 0 1 0 | 0 1 0 | Dec. 1863 |
| 2464 | Burra Burra (cop.), South Australia | 5 0 0 | 70 | | 320 0 0 | 5 0 0 | Sept. 1864 |
| 6000 | Central American (silver) [L.] | 5 0 0 | — | | 4 6 8 | 0 14 10 | Dec. 1863 |
| 15000 | Cape Copper Mining [L. £10] [S.E.] | 7 0 0 | 10 | 8¼ 9 | 0 15 0 | 0 5 0 | Sept. 1864 |
| 12000 | Cobre Copper Co. (cop.), Cuba [S.E.] | 40 0 0 | 28 | 26 28 | 100 0 0 | 0 8 0 | July, 1864 |
| 100000 | Don Pedro No. Del Rey [L. £1] [S.E.] | 0 10 0 | ⅝ | ⅜ ⅝ | 0 0 9 | 0 0 9 | Dec. 1863 |
| 70000 | English and Australian [S.E.] | 5 0 0 | — | | 1 12 0 | 0 2 0 | Aug. 1864 |
| 18000 | East Indian Coal, Calcutta [L.] | 10 0 0 | — | | 7½ per cent. | | Yearly. |
| 25000 | Fortuna (lead), Spain [L.] [S.E.] | 2 0 0 | 3¾ | 3¼ 3¾ | 0 14 4 | 0 3 0 | June, 1864 |
| 25000 | Gen. Mining Assoc., Nova Scotia [S.E.] | 20 0 0 | 24 | 23 24 | 21 10 0 | 1 0 0 | June, 1864 |
| 68000 | Kapunda Mining Co., Australia [S.E.] | 1 0 0 | 1⅛ | ⅞ 1⅛ | 0 12 0 | 0 1 0 | June, 1864 |
| 15000 | Linares (ld.), Pozo Ancho, Spain [S.E.] | 3 0 0 | 6 | 5 6 | 10 1 2 | 0 5 0 | Aug. 1864 |
| 10000 | Lusitanian (of Portugal) [S.E.] | 2 0 0 | — | 1 1½ | 1 1 0 | 0 2 0 | July, 1864 |
| 10000 | Pontgibaud (sil.-lead), France [S.E.] | 20 0 0 | 8 | 6 8 | 1 7 3 | 0 7 3 | Jan. 1864 |
| 97500 | Port Phillip (gold), Clunes [S.E.] | 1 0 0 | — | ¾ 1 | 0 12 6 | 0 1 0 | July, 1864 |
| 11000 | St. John del Rey [L.], Brazil [S.E.] | 15 0 0 | 36 | 30 32 | 63 15 0 | 2 10 0 | June, 1864 |
| 43174 | Unit. Mexican (sil.), Mexico [S.E.] Av. | 28 5 0 | 4¾ | 4¼ 4¾ | 2 19 0 | 0 5 0 | Sept. 1864 |
| 10000 | Vancouver (coal) [L. £10] | 5 0 0 | — | | 0 10 0 | 0 5 0 | May, 1864 |
| 25000 | Victoria (London) Mining Co. [L.] | 1 0 0 | — | | 0 1 9 | 0 1 9 | Aug. 1864 |
| 20000 | West Canada Mining Company [L.] | 1 0 0 | — | | 0 12 0 | 0 5 0 | June, 1864 |
| 45000 | Yudanamutana (cop.), S. A. [L.] [S.E.] | 3 0 0 | 1⅞ | 1⅞ 2 | 0 5 0 | 0 5 0 | Aug. 1863 |

## FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

| Shares. | Mines. | Paid. | Last Pr. | Business. | Dividends | Per Share. | Last paid. |
|---|---|---|---|---|---|---|---|
| 10000 | Alten and Quænangen Uni. (cop.) [L. £5] | 4 10 0 | — | | 4 5 0 | 0 15 0 | Nov. 1858 |
| 10000 | Copiapo Mining Company, Chili [S.E.] | 16 0 0 | — | | 6 18 0 | 0 10 0 | Nov. 1862 |
| 10000 | Gt. Barrier Land, Min., &c., N. Ze. [L. £5] | 4 10 0 | — | | 15 per cent. | | May, 1859 |
| 103815 | Mariquita and New Granada [S.E.] | 1 0 0 | ⅛ | ⅜ ⅝ | 0 9 6 | 0 1 6 | July, 1859 |

## NON-DIVIDEND FOREIGN MINES.

| Shares. | Mines. | Paid. | Last Pr. | Bus. done. | Last Call |
|---|---|---|---|---|---|
| 35000 | Alamillos (lead), Spain [L. £2] | 1 0 0 | 1¼ | 1 1¼ | Sept. 1864 |
| 100000 | Anglo-Brazilian (gold) [L. £1] [S.E.] | 0 5 0 | — | ⅛ ⅜ | Dec. 1863 |
| 20000 | Beariz Tin Streaming Company [L. £1] | 0 17 6 | — | | Oct. 1863 |
| 25000 | Capula (silver), Mexico [L. £2] [S.E.] | 1 0 0 | — | ½ ¾ | Feb. 1864 |
| 17000 | Central Italian (copper) [7000 £2 paid] | 0 6 0 | — | | Jan. 1859 |
| 10000 | Copiapo Smelting [L.], Chili | 10 0 0 | — | | Fully paid. |
| 75000 | Dun Mountain (copper), New Zealand [L.] [S.E.] | 1 0 0 | — | | Fully paid. |
| 50000 | East del Rey (gold), Brazil [L. £3] [S.E.] | 1 5 0 | — | | Oct. 1863 |
| 8000 | English and Canadian Mining Company [L.] | 5 0 0 | — | | Fully paid. |
| 40000 | Fortune (copper), West Australia [L.] | 2 0 0 | — | | Fully paid. |
| 50000 | Frontino and Bolivia (gold), New Granada [L. £2] | 0 10 0 | — | | Mar. 1864 |
| 80000 | Great Northern (copper), South Australia [L. £2] [S.E.] | 1 10 0 | — | | June, 1862 |
| 24000 | Hindostan (copper), Bengal [L. £5] | 3 0 0 | — | | Feb. 1863 |
| 4000 | Hope Silver-Lead and Copper Mining Co. [L.], Jamaica | 25 0 0 | — | | Fully paid. |
| 10000 | Karbitz Colliery Company [L.] | 1 0 0 | — | | Fully paid. |
| 30000 | Lagunazo (sulphur, copper), Portugal [L.] | 1 0 0 | — | | Fully paid. |
| 100000 | Montes Aureos (gold), Brazil [L.] [S.E.] | 2 0 0 | 2 | 1¼ 1¾ | Fully paid. |
| 50000 | Nova Scotia (land and gold) [L. £2] | 1 0 0 | — | | Nov. 1862 |
| 10000 | Otea (copper) [L. £2] | 0 10 0 | — | | |
| 15000 | Pachuca Silver Mining Company, Mexico [L. £1] | 1 0 0 | — | | June, 1863 |
| 50000 | Panulcillo (copper) [L. £4] [S.E.] | 1 0 0 | 1⅛ | 1⅛ | Feb. 1864 |
| 6000 | Peel River Land and Mineral [Limited] | 100 0 0 | — | | Stock. |
| 23000 | Quebrada (copper), Venezuela [L. £10] | 6 10 0 | — | | Sept. 1864 |
| 50000 | Rossa Grande (gold), Brazil [L. £1] [S.E.] | 0 5 0 | — | | April, 1864 |
| 10000 | San Roque (lead), Spain | 5 0 0 | — | | Fully paid. |
| 60000 | Santa Barbara (gold), Brazil [L. £1] | 0 15 0 | — | | Sept. 1864 |
| 120000 | Scottish Australian Mining Company [L. £1] | 0 17 6 | ⅛ | ⅜ ⅝ | Feb. 1864 |
| 15000 | South Europe Mining Company, Spain [L. £5] | 3 0 0 | — | | May, 1860 |
| 12000 | Teplitz Colliery Co., Bohemia [L. £5] | 3 0 0 | — | | June, 1863 |
| 5000 | Valgodemard Mining Company [L. £20] | 8 0 0 | — | | June, 1864 |
| 50000 | Vallanzasca (gold), Italy [L. £1] [S.E.] | 0 10 0 | 1⅛ | 1 1⅛ | Oct. 1864 |
| 45000 | Victor Emanuel (copper), Italy [L.] | 1 0 0 | — | | Fully paid. |
| 1000 | Western Africa Malachite (copper) [L.] | 110 0 0 | — | | Oct. 1862 |
| 12000 | Wheal Ellen (copper), South Australia [L.] | 5 0 0 | — | | Fully paid. |
| 80000 | Worthing (copper), South Australia [L.] [S.E.] | 1 0 0 | — | ¾ ⅞ | Fully paid. |
| 75000 | Yorke Peninsula, South Australia [L. £1] | 1 0 0 | 1 | | Fully paid. |

## PROGRESSIVE MINES.

| Shares | Mines. | Paid. | Last Pr. | Bus. done. | Last Call. |
|---|---|---|---|---|---|
| 1000 | Alt-y-Crib (lead) [L. £5] | 4 12 6 | — | | July, 1864 |
| 6000 | Bagtor (tin) [L.] | 2 0 0 | — | | Fully paid. |
| 4000 | Bedford Cons. (cop.), Tavistk. | 2 9 0 | — | | July, 1864 |
| 2200 | Bedol Aur (lead), Holywell | 0 12 0 | — | | June, 1864 |
| 2000 | Berehaven (copper), Ireland | 1 0 0 | — | | |
| 500 | Billins (lead) | 30 0 0 | — | | Fully paid. |
| 6000 | Boscawen (tin), Kenwyn | 2 10 0 | — | | Feb. 1864 |
| 5000 | Bottle Hill (tin) Plympton | 1 8 6 | — | | May, 1864 |
| 30000 | Bromlow (ld.), Minsterley, Salop | 1 0 0 | — | | Fully paid. |
| 200 | Brynford Hall (lead), Flint | 30 0 0 | 25 | | Aug. 1863 |
| 500 | Bryn Gwiog (lead), Flint | 9 0 0 | — | | June, 1864 |
| 1832 | Bryntail (lead), Llanidloes | 8 7 6 | 3¾ | 3¼ 3¾ | June, 1864 |
| 6380 | Buller & Basset, (cp.) Redruth | 4 11 6 | — | | Feb. 1864 |
| 915 | Calvadnack (tin), Wendron | 25 3 6 | — | | Aug. 1864 |
| 1600 | Camborne Consols (copper) | 18 10 0 | — | | Feb. 1864 |
| 4600 | Camborne Vean & Wh. Francis | 10 8 4 | — | 1 1⅛ | Oct. 1864 |
| 75000 | Cambrian Consolid. (gd.) [L. £2] | 1 0 0 | — | | Aug. 1862 |
| 8000 | Cape Cornwall (cop.), [L. £2 10s.] | 1 0 0 | — | | Aug. 1864 |
| 12000 | Caradon & Phœnix Cons. [L. £1] | 0 10 0 | — | | |
| 914 | Caradon Cons. (cop.), St. Cleer | 29 6 6 | — | | Sept. 1864 |
| 10000 | Caradon Vale (copper) | — | — | 1⅛ 2 | |
| 2580 | Carmarthen United (lead) | 5 0 0 | — | | Fully paid. |
| 2000 | Carnelloe (tin and cop.), Zennor | 1 0 0 | — | | Jan. 1864 |
| 6000 | Carn Camborne (cop.), Cambn. | 1 11 0 | 34s. | 32s. 34s. | Oct. 1864 |
| 2048 | Carnyorth (tin), St. Just | 4 10 0 | — | | June, 1864 |
| 20000 | Carysfort [3200 £2¼ pd., 16800 £1 pd.] | | — | | |
| 10000 | Castleward, Ireland [L.] | 1 0 0 | — | | Fully paid. |
| 2500 | Cefn Cilcen (ld.), Flint [L. £5] | 2 8 6 | — | | Aug. 1864 |
| 800 | Cefn Cwm Brwyno (lead) | 4 0 0 | — | | Sept. 1864 |
| 2500 | Central Minera (lead) [L. £5] | 2 12 0 | — | | Aug. 1864 |
| 3000 | Chiverton Moor (lead) | 3 0 0 | — | | Oct. 1863 |
| 3000 | Chiverton Valley (lead) | 3 0 0 | — | | Feb. 1864 |
| 4000 | Ciara Unit., Ponterwyd [L. £3] | 2 2 0 | — | | Jan. 1864 |
| 1024 | Cleer's Hill (tin), St. Stephen's | 0 2 0 | — | | |
| 787 | Clijah & Wentworth (tin, cp.) | 33 0 0 | — | | Aug. 1864 |
| 3000 | Clowance Wood [L. £5] | 3 0 0 | — | | Oct. 1864 |
| 16000 | Coolartra & Bond [L.] [5300 £1 pd., 10700 12s. pd.] | | | | Jan. 1864 |
| 50000 | Connorree (cop., sulph.) [L.] | 1 0 0 | 1 | 19s. 20s. | Fully paid. |
| 6000 | Cornish Clay and Tin [L.] | 1 0 0 | — | | Fully paid. |
| 861 | Crane (copper), Camborne | 25 7 0 | — | | Oct. 1864 |
| 30000 | Crenver and Wh. Abraham [L.] | 2 10 0 | — | | |
| 12000 | Crelake (cop.), Tavistock | 2 13 0 | — | | April, 1864 |
| 2000 | Crowlwm (lead), Llanidloes | 1 11 0 | — | | Dec. 1863 |
| 6000 | Cuddra (cop., tin), St. Austell | 4 5 0 | — | | July, 1861 |
| 10000 | Cwmsymlog (sil.-ld.), [L. £5] | 2 0 0 | — | | May, 1864 |
| 35000 | Dale (lead), North Stafford | 1 0 0 | — | | Fully paid. |
| 1000 | Darren (lead) [L.], Cardigan | 6 8 0 | — | | May, 1864 |
| 672 | Ding Dong (tin), Gulval | 44 10 6 | — | | Dec. 1863 |
| 20000 | Dolfrwynog (gold) [L. £1] | 0 15 0 | — | | June, 1864 |
| 1000 | Durlo (tin), Lelant | 8 12 0 | — | | Oct. 1864 |
| 1000 | Eaglebrook (lead) [L. £20] | 17 2 0 | — | | April, 1864 |
| 1000 | East Basset and Grylls (tin) | 2 7 6 | — | | Aug. 1864 |
| 6000 | E. Bottle Hill (tin), Plympton | 0 4 6 | — | | Aug. 1864 |
| 50000 | East Cambrian (gold) [L. £1] | 0 15 0 | — | | Feb. 1864 |
| 6000 | East Carn Brea (cop.) Redruth | 3 15 0 | 7 | 6½ 7 | Feb. 1863 |
| 2000 | East Chiverton (lead) | 2 10 6 | — | | Aug. 1864 |
| 50000 | E. Clogau (gold), Merio. [L. £1] | 0 6 0 | — | | Mar. 1864 |
| 4000 | East Devon Gt. Consols (cop.) | 1 14 0 | — | | May, 1864 |
| 2048 | E. Falmouth (s.-ld.), Kenwyn | 5 0 6 | — | | April, 1864 |
| 6000 | E. Grenville (cop.), Camborne | 2 7 0 | 7¼ | 7⅜ 7⅝ | Aug. 1864 |
| 6000 | E. Gt. Work (tin), Breage [L. £5] | 3 10 0 | — | | Oct. 1864 |
| 4000 | E. Gunnis Lake & S. Bedf. (cop.) | 7 19 6 | ½ | ¼ ⅛ | Sept. 1864 |
| 6145 | East Jane (sil.-ld.), Cardinham | 2 7 0 | — | | Mar. 1864 |
| 6000 | East Laxey (lead) [L. £3] | 2 0 0 | 2¼ | 2 2¼ | July, 1864 |
| 1024 | E. Margaret (tin), Uny Lelant | 20 5 0 | — | | Aug. 1864 |
| 8000 | E. Polberro (tin) [L. £1] [4000 £1 pd. 4000 2s. 6d. pd.] | | | | Nov. 1863 |
| 3986 | E. Providence (tin), Uny Lel. | 4 9 8 | — | | Sept. 1864 |
| 5610 | East Seton (cop.), Camborne | 0 10 0 | — | | Dec. 1863 |
| 256 | East Tolgus (copper), Redruth | 88 0 0 | — | | June, 1864 |
| 1024 | E. Treskerby (cop.), Redruth | 10 1 0 | 6½ | 5½ 6 | Aug. 1864 |
| 9600 | East Wheal Abraham (copper) | 0 5 0 | — | | Aug. 1864 |
| 1190 | E. Wheal Agar (cop.), St. Cleer | 11 17 0 | — | | Sept. 1863 |
| 1300 | E. Wheal Ellen (cop.) St. Agnes | 0 10 6 | — | | Oct. 1864 |
| 2048 | East Wheal Grylls (tin, cop.) | 2 2 6 | — | | July, 1864 |
| 4000 | E. Wh. Russell, Tavis. [S.E.] | 9 5 6 | 5 | 4⅜ 4½ | Sept. 1864 |
| 6000 | East Wheal Vor (tin and cop.) | 5 0 0 | — | 1⅞ 2⅛ | |
| 2000 | Erwfelin (lead), [L. £3] | 1 0 0 | — | | |
| 6144 | Esther Und. (tin), Cardingham | 0 3 10 | — | | Sept. 1864 |
| 6000 | Furze Hill Wood Cons., Buckl. | 1 5 6 | — | | April, 1864 |
| 1026 | Garden (tin), Morvah | 4 17 9 | — | | May, 1863 |
| 4096 | Garlidna Untd. (tin), Wendron | 4 1 6 | — | | Mar. 1864 |
| 1000 | Garreg (lead), Flint | 5 14 6 | — | | Dec. 1863 |
| 4000 | Gawton (copper), Tavistock | 2 9 6 | — | | June, 1864 |
| 6000 | Gen. Min. Co. for Irel. (cop.) | 4 0 0 | — | | |
| 30000 | Glasgow Caradon Con. (cp.) [L.] | 1 0 0 | — | | Fully paid. |
| 32 | Godolphin (cop., tin), Wrexham | 4 0 0 | — | | Aug. 1864 |
| 5700 | Goginan (silver-lead) | 12 10 0 | — | | April, 1864 |
| 2000 | Golch Hill (lead), Flintshire | 1 4 5 | — | | No call. |
| 6144 | Gonamena (copper), St. Cleer | 4 9 0 | — | | Sept. 1864 |
| 2000 | Goonzion (copper), St. Neot | 1 12 6 | — | | Aug. 1864 |
| 486 | Gramb. & St. Aub. (cp.) [S.E.] | 63 0 0 | 8 | 7 8 | Sept. 1864 |
| 5000 | Great Brigan (cop.), Redruth | 6 11 6 | — | | Sept. 1864 |
| 4096 | Great Caradon (cop.), St. Ive | 2 14 0 | — | | Sept. 1864 |
| 10000 | Great Devon and Bedford [L.] | 1 15 0 | — | | Mar. 1864 |
| 3000 | Gt. East Lovell (tin), Helston | 1 0 0 | — | | |
| 5000 | Great North Downs (copper) | 4 0 0 | 4¾ | 4¾ 5¼ | Sept. 1864 |
| 6000 | Gt. Retallack (sil.-ld., blende) | 2 6 6 | — | | April, 1864 |
| 6000 | Great S. Chiverton (sil.-lead) | 0 10 0 | 3¾ | 3¼ 3½ | April, 1864 |
| 52000 | Great Tregune Consols (cop.) | 0 5 0 | — | | |
| 3000 | Great West Chiverton (lead) | 1 0 0 | — | | June, 1864 |
| 8730 | Great Wheal Baddern (tin) | 6 16 0 | — | | May, 1863 |
| 6000 | Gt. Wh. Busy (cop., tin), Ken. | 13 14 6 | 2½ | 2¼ 2½ | April, 1863 |
| 3072 | Gt. Wh. Grylls (tin, copper) | 1 0 0 | — | | No call. |
| 10000 | Gt. Wh. Metal, Breage [L. £2] | 1 0 0 | — | | |
| 2500 | Grit and Stapeley (lead), [L.] | 10 0 0 | — | | July, 1864 |
| 2048 | Grylls Consols (tin) | 1 5 0 | — | | |
| 4000 | Grylls Wheal Florence (tin) | — | — | | |
| 4910 | Gurlyn (cop., tin), St. Erth | 2 14 11 | — | | July, 1864 |
| 6068 | Gwydyr Park Con., Llanrwst | 1 7 3 | — | | Feb. 1864 |
| 6000 | Hallenbeagle (copper) | 1 0 0 | 4 | 3¼ 3½ | July, 1864 |
| 6400 | Harwood (ld.), Durham [L. £1] | 0 6 6 | — | | Sept. 1864 |
| 5000 | Havan (ld.), Cardigan [L. £5] | 4 5 0 | — | | July, 1864 |
| 7219 | Hawkmoor (tin, cop.) Calstock | 3 6 0 | — | | Feb. 1864 |
| 5000 | Hendre (lead), Flint [L. £5] | 2 10 0 | — | | Sept. 1864 |
| 6000 | Hingston Down (cop.), [S.E.] | 5 10 6 | 4⅜ | 4 4½ | Dec. 1863 |
| 6000 | Illogan (tin and copper) | 0 12 6 | — | | Nov. 1863 |
| 5000 | Kelly Bray (ld.), Callington | 5 2 6 | 12s. | ⅝ ¾ | June, 1864 |
| 6000 | Keswick (lead), Portinscale | 5 6 6 | — | | Mar. 1862 |
| 96 | Kilmorey (lead) | 25 5 0 | — | | Feb. 1864 |
| 6000 | Lady Bertha (cop.) [S.E.] | 3 2 6 | — | ½ ⅝ | Oct. 1864 |
| 3000 | Lanivet (tin), [L. £2] | 1 14 0 | — | | Aug. 1864 |
| 1019 | Leeds & St. Aubyn (tin, cop). | 17 6 4 | — | | Feb. 1862 |
| 963 | Lelant Cons. (tin), Uny Lelant | 35 0 0 | — | | Mar. 1863 |
| 4000 | Llantwit Vardre (coal), [L. £5] | 4 10 0 | — | | May, 1864 |
| 2000 | Long Rake (lead), Flint | 5 0 0 | — | | Oct. 1863 |
| 2000 | Lower Park (ld.), Denbigh [L.] | 3 11 0 | — | | Jan. 1864 |
| 6000 | Maudlin (copper), Lostwithiel | 4 2 0 | — | | April, 1864 |
| 4480 | Merllyn (lead), Flint | 4 1 6 | — | | June, 1864 |
| 3000 | Minera Western Boundary [L. £1] | 0 2 6 | — | | Sept. 1863 |
| 3000 | Mineral Bottom (lead) | 3 0 0 | — | | |
| 5000 | Molland (cop.), S. Moulton | 2 9 6 | — | | Nov. 1862 |
| 1024 | Nangiles (tin, copper), Kea | 19 0 0 | 26 | 23 25 | Sept. 1864 |
| 5000 | Nanteos and Penrhiw [L.] | 4 0 0 | — | | Fully paid. |
| 4000 | Nanteos (lead) [L. £1] | 0 10 0 | — | | Sept. 1864 |
| 512 | Nant Minera (lead), [L. £20] | 6 0 0 | — | | Aug. 1864 |
| 6400 | Nant-y-Iago (ld.), Merioneth | 3 17 6 | — | | May, 1863 |
| 6000 | New East Birch Tor (tin) | 0 2 6 | — | | |
| 10000 | New Concord (sil.-ld.) [L. £3] | 1 0 0 | — | | |
| 12000 | New Cornish [8000 £1 paid, 4000 7s. 6d. paid] | | | | Mar. 1864 |
| 6400 | N. Crow Hill (ld.), St. Stephen | 2 12 6 | — | | Aug. 1864 |
| 6514 | New E. Russell (cop.), Tavistk. | 0 8 0 | — | | June, 1864 |
| 6400 | Nether Hearth (lead), Dufton | 0 18 6 | — | | Oct. 1863 |
| 400 | New Hendra (tin, cop.), Breage | 2 11 0 | — | | Aug. 1864 |
| 6400 | New Pembroke (tin and cop.) | 0 9 0 | — | | May, 1864 |
| 1024 | New Rosewarne (cop.), Gwinear | 2 0 0 | 11 | 9 11 | Dec. 1863 |
| 6000 | New S. Caradon (cop.), St. Cleer | 0 16 6 | — | | Dec. 1863 |
| 5969 | New Treleigh (cop.), Redruth | 3 3 0 | — | | Mar. 1864 |
| 960 | New Trevenen (tin), Wendron | 7 14 0 | — | | Oct. 1864 |
| 470 | Newtownards Min. Co., Down | 50 0 0 | — | | |
| 1024 | New Wendron (tin), Wendron | 7 0 0 | — | | Jan. 1863 |
| 1024 | New Wh. Grylls (tin and cop.) | 2 1 6 | — | | May, 1863 |
| 4096 | New Wheal Lovell (tin) | 2 2 6 | — | | June, 1864 |
| 15000 | New Wheal Martha (cop.) [L.] | 1 0 0 | 1½ | 1⅜ 1⅝ | Fully paid. |
| 400 | New Wh. Seton (cop.), Camb. | 37 15 0 | — | | Oct. 1864 |
| 6000 | New Wh. Vor & Metal Utd. (tin) | 0 2 6 | — | | May, 1864 |
| 1024 | North Buller (cop.), Redruth | 26 13 6 | — | | Sept. 1864 |
| 6000 | North Chiverton (lead | 1 0 0 | 2¼ | 2 2¼ | |
| 16000 | North Devon (sil.-ld.) [L. £1] | 0 13 0 | — | 2 2¼ | Oct. 1863 |
| 5000 | N. Dolcoath (cop.), Camborne | 3 1 6 | — | | Jan. 1864 |
| 6000 | North Downs (cop.) Redruth | 2 13 4 | 1 | ⅞ 1⅛ | June, 1864 |
| 2500 | North Frances (cop.) | 13 17 6 | — | | Aug. 1864 |
| 1366 | N. Grambler (cop.), Redruth | 4 7 6 | — | | Aug. 1864 |
| 6000 | N. Gt. Work, Breage [L. £3] | 2 9 0 | — | | Aug. 1864 |
| 16000 | N. Hallenbeagle [8000 £1 pd., 8000 8s. 6d. pd.] | | | | July, 1863 |
| 6000 | North Jane (tin, silver-lead) | 2 9 6 | — | | Aug. 1864 |
| 2000 | N. Levant (tin, cop.), St. Just | 9 3 0 | — | | Sept. 1864 |
| 20000 | N. Minera (ld.) [15000 £1 pd., 5000 12s. 6d. pd.] | | | | Aug. 1864 |

| Shares. | Mines. | Paid. | Last Pr. | Bus. done. | Last C[all] |
|---|---|---|---|---|---|
| 4000 | N. Phœnix (cop.) Linkinghorne | 4 4 0 | — | | |
| 6400 | No. Pool (tin & cop.), Illogan | 1 15 8 | — | | May, |
| 700 | N. Roskear (cop.), Camborne | 33 5 0 | 20 | 18 19 | Jan. |
| 6144 | North Rosewarne (copper) | 1 0 0 | — | | July, |
| 6000 | N. Wh. Basset (cop., tin) [S.E.] | 4 5 0 | 1⅛ | 1¼ 2 | Jan. |
| 5610 | North Wh. Crofty (cop.) [S.E.] | 2 10 6 | 3 | 2½ 2¾ | Oct. |
| 6144 | N. Wh. Robert, Samp. Spiney | 3 12 11 | — | | Aug. |
| 1000 | N. Wh. Seton, Camborne [L. £25] | 2 10 0 | — | | Aug. |
| 12288 | Okel Tor (cop.), Calstock | 2 3 10 | — | | July, |
| 1000 | Pant-y-Pydew (lead) | 5 7 6 | — | | Aug. |
| 8465 | Pedn-an-drea (tin), Redruth | 4 3 6 | — | | Oct. |
| 5000 | Pendeen Cons. (cop.), St. Just | 4 9 6 | — | | Aug. |
| 5000 | Penhalls (tin), St. Agnes | 2 16 0 | — | | Sept. |
| 512 | Penhallow Moor (silver-lead) | 3 0 0 | — | | Aug. |
| 6000 | Penrait (sil. ld.), Merion. [L.] | 2 7 0 | — | | June, |
| 6000 | Polhigey Moor (tin), Wendron | 1 18 0 | — | | Feb. |
| 12800 | Prince of Wales (tin), Calstock | 0 6 0 | 5s. | ⅛ ¼ | Feb. |
| 8000 | Princess of Wales (tin), Sancreed | 1 0 0 | — | | Sept. |
| 6000 | Prosper Uni. (tin, cp.), St. Hilary | 7 1 6 | — | | April, |
| 10156 | Redmoor (cop., tin), Callington | 0 14 5 | — | | April, |
| 512 | Retanna Hill (tin), Wendron | 2 17 6 | — | | Aug. |
| 5000 | Rhafna (lead), Carmart. [L. £1] | 0 10 0 | — | | June, |
| 4096 | Rialton E. Wh. Rose (sil.-ld.) | — | 2⅛ | | |
| 6000 | Roborough Down (cop.) [L. £3] | 1 0 0 | — | | No call. |
| 4026 | Rosewarne Consols (copper) | 4 11 6 | — | | |
| 3848 | Rosewarne United (cp., tin) | 3 12 9 | — | | Feb. |
| 6000 | Roskear (copper), Camborne | 0 10 0 | — | | July, |
| 700 | Roskearnowth (cop.), Camborne | 1 10 0 | — | | Sept. |
| 2000 | Scorrier Con. (tin, cp.), St. Agnes | 4 13 6 | — | | Jan. |
| 800 | Seglenias, Montgomery [L. £8] | 5 0 0 | — | | Feb. |
| 12500 | Silver Moun. (lead) [L.] | 2 0 0 | — | | May, |
| 20000 | Sil. Vein, St. Winnow [15000 £1 pd., 5000 5s. pd.] | | | | Fully |
| 4096 | Sithney Wheal Metal (tin) | 3 10 0 | — | 1⅛ 2 | Jan. |
| 12000 | Sortridge Cons. (cop.) [S.E.] | 1 1 0 | — | | June, |
| 6000 | So. Alfred (cop.), Phill. & Gwin. | 0 12 6 | — | | June, |
| 512 | South Basset (cop.), Gwennap | 16 10 8 | — | | April, |
| 100 | South Bryn Gwiog (lead) | 7 0 0 | — | | Aug. |
| 6000 | So. Buller (copper), Gwennap | 0 14 0 | — | | July, |
| 4096 | S. Caradon Wh. Hooper (cop.) | 3 19 6 | — | | Aug. |
| 6000 | South Carn Brea (cop.) | 7 11 0 | — | | May, |
| 6138 | S. Condurrow (tin, cp.), Camb. | 2 17 0 | 30s. | 1¾ 2 | June, |
| 2283 | Sou. Crenver (cop.), Crowan | 12 9 0 | — | | Oct. |
| 6000 | South Darren (ld.) [L. £3½] | 3 4 6 | 1¾ | 1¾ 2 | Oct. |
| 6000 | S. Dolcoath & Carnarthen Con. | 2 13 0 | — | | Aug. |
| 5000 | S. Foxdale (ld.) I. of Man [L. £5] | 2 10 0 | — | | Dec. |
| 2000 | South Gorland (cop.), St. Day | 4 10 0 | — | | Oct. |
| 2000 | South Grylls (copper) [L. £10] | 7 0 0 | — | | Jan. |
| 1024 | S. Herodsfoot (lead) Liskeard | 6 2 6 | — | | May, |
| 96 | South Kilmorey (lead) | 23 10 0 | — | | April, |
| 2000 | South Lovell (tin), Wendron | 2 0 0 | 2¼ | 2 2¼ | Feb. |
| 4000 | S. Minera (lead) [L. £5½] | 4 0 0 | — | | Aug. |
| 96 | South Pant-y-Gof (lead) | 27 0 0 | — | | July, |
| 5325 | So. Phœnix (cop.) Linkin. | 7 1 4 | — | | May, |
| 1024 | S. Tresavean (cop.), St. Day | 5 6 7 | — | | Oct. |
| 937 | So. Wh. Crofty (cop.), Illogan | 20 6 4 | 12⅛ | 10 12⅛ | Dec. |
| 5791 | So. Wh. Leisure (tin and cop.) | 0 10 0 | — | | Oct. |
| 400 | So. Wh. Seton (cop.), Camborne | 49 13 0 | — | | |
| 794 | Spearne Cons. (tin), St. Just | 6 12 0 | — | | Oct. |
| 10000 | St. Cuthbert Lead Smelt. [L.] | 5 0 0 | — | | Mar. |
| 40000 | St. David's (gold) [L. £2 10s.] | 1 5 0 | — | | Fully |
| 1024 | St. Ives Wheal Allen (tin) | 11 1 7 | — | | Nov. |
| 8000 | St. Just Untd. (tin) [L. 2½] | 2 0 0 | — | | Nov. |
| 6000 | St. Just Consols (tin) [L. £1] | 0 15 0 | — | | Dec. |
| 640 | Stamp Office (lead), Mold | 1 0 0 | — | | July, |
| 920 | Stray Park (cop., tin) [S.E.] | 33 15 6 | 25 | 18 20 | July, |
| 3500 | Tin Hill (tin), St. Austell | 0 17 6 | — | | Sept. |
| 6000 | Tolcarne (cop.), Camborne | 2 2 0 | — | | Aug. |
| 6000 | Tolvadden (copper), Marazion | 1 0 0 | — | | |
| 1600 | Torbay Hematite Iron [L. £8] | 6 7 6 | — | | Dec. |
| 5000 | Treloweth (copper), St. Erth | 7 8 8 | — | | Jan. |
| 1024 | Trencrom (tin), Uny Lelant | 12 12 3 | — | | Jan. |
| 501 | Tresavean and Trethurrap | 12 10 0 | — | | Aug. |
| 3105 | Tresellyn and Scaddick Cons. | 1 12 6 | — | | July, |
| 5600 | Trevenen and Tremenheere | 7 1 6 | — | | Aug. |
| 4096 | Treweatha (sil.-ld.), Menhen. | 5 12 0 | — | | Jan. |
| 2048 | Treworlis (tin), Wendron | 6 15 1 | — | | Oct. |
| 2500 | Trimley Hall [1250 £1 pd., 1250 15s. paid] | | | | April, |
| 4000 | Trumpet Unit. (tin), Wendron | 1 9 6 | — | | Jan. |
| 6400 | Tyne Head (tin & cop. [L. £1] | 0 17 0 | — | | Sept. |
| 6000 | Tywarnhaile (copper) | 5 17 6 | — | | July, |
| 20000 | Vale of Towy (lead), Carmar. | 0 15 6 | 6s. | 5s. 6s. | Jan. |
| 4000 | Wentnor [L. £2½] (lead) | 2 4 6 | — | | Oct. |
| 3000 | Wentworth Consols (lead) | 3 0 0 | 8 | 7 8 | |
| 60000 | Welsh Gold, Dolgelly [L.] | 1 0 0 | — | | Fully |
| 20000 | West Beam (tin) [L.] | 1 0 0 | — | | Fully |
| 40000 | West Clogau (gold), Merioneth | 1 0 0 | — | | Fully |
| 1000 | West Cwm Erfin (lead) [L] | 2 0 0 | — | | Oct. |
| 1218 | W. Condurrow (tin, cop.), Cam. | 9 6 8 | 9s. | 7s. 9s. | Sept. |
| 3500 | W. Great Work (tin), Germoe | 1 18 0 | — | | Sept. |
| 6000 | W. Grylls (tin), Perranuthnoe | 0 4 0 | — | | Nov. |
| 12000 | W. Maria & Fortescue, Lamerton | 1 0 0 | — | | May, |
| 500 | West Nanty (lead) [L.] | 10 0 0 | — | | Oct. |
| 19000 | West Par Con. (cp.) St. Blazey | 2 17 0 | — | | Aug. |
| 1000 | W. Rose Down (cop.), Caradon | 12 10 0 | — | | Oct. |
| 256 | West Sharp Tor (cp.) Rillaton | 161 0 0 | — | | May, |
| 1056 | West Stray Park (cop.), Camb. | 9 11 6 | — | | Oct. |
| 512 | West Tolgus (cop.), Redruth | 40 0 0 | 60 | 60 65 | Oct. |
| 5481 | West Trevelyan (tin, copper) | 4 3 10 | — | | Mar. |
| 512 | West Wh. Frances (cop.), Illo. | 92 5 0 | 30 | 25 30 | Aug. |
| 9017 | West Wheal Jane (tin, &c.) | 3 16 10 | — | | Sept. |
| 5000 | West Wh. Kitty (tin), St. Agnes | 0 7 0 | — | | Aug. |
| 10000 | W. Wh. Martha (cp. & sil.) [L. £2] | 1 5 0 | — | | July, |
| 4096 | West Wheal Vor (tin), Helston | 1 0 0 | — | | Mar. |
| 6000 | Wheal Agar (copper), Illogan | 5 11 0 | — | | Sept. |
| 5990 | Wh. Arthur (cop.), Calstock | 4 6 6 | — | | April |
| 256 | Wheal Buller, Redruth [S.E.] | 23 0 0 | 12 | 10 12 | Sept. |
| 6000 | Wh. Caradon (cop.), St. Ives | 2 2 6 | — | | July, |
| 1000 | Wheal Curtis (cop.), Crowan | 8 13 4 | — | | Aug. |
| 6000 | Wheal Crebor (cop.), Tavistock | 1 13 0 | 2⅛ | 1⅞ 2⅛ | Aug. |
| 6000 | Wheal Crofty (cop.), Illogan | 1 7 6 | — | | Mar. |
| 6144 | Wh. Damsel (cp., tin), Gwennap | 2 15 0 | — | | July, |
| 4096 | Wh. Edward (cop.), Calstock | 8 14 6 | — | | Oct. |
| 1024 | Wheal Emily Henrietta (cop.) | 12 15 0 | — | | Sept. |
| 4000 | Wh. Emma (cp) Buckfastleigh | 3 2 6 | — | | Jan. |
| 2000 | Wheal Falmouth & Sperries | 7 0 0 | — | | Oct. |
| 6000 | Wh. Grenville (copper) [S.E.] | 8 14 0 | 6¼ | 5¾ 6 | Aug. |
| 1024 | Wh. Grylls (tin), Perranuth. | 5 14 0 | — | | Oct. |
| 5120 | Wh. Harriett (cop.), Camborne | 4 11 6 | — | | Sept. |
| 6000 | Wheal Hartley (cop.), Gwinear | 1 2 6 | — | | Mar. |
| 3648 | Wheal Hearle (tin), St. Just | 3 5 0 | — | | Aug. |
| 2048 | Wheal Hope (sil.-ld.), Perran | 4 2 6 | — | | Oct. |
| 6000 | Wheal Ida (sil.-lead), St. Ive | 0 10 0 | — | | Sept. |
| 4800 | Wh. Ludcott and Wrey (lead) | 3 14 8 | — | | Aug. |
| 968 | Wheal Margery (tin, copper) | 20 6 10 | — | | Dec. |
| 1000 | Wh. Mary Hutchings (Plymp.) | 0 13 0 | — | | Aug. |
| 6000 | Wh. Norris (tin, cp.), St. Cleer | 3 14 7 | — | | June, |
| 1024 | Wheal Par (tin), St. Blazey | 6 16 0 | — | | Aug. |
| 6000 | Wh. Pollard (cop.), St. Neot's | 3 3 6 | — | | April |
| 1024 | Wheal Polmear (copper) | 4 13 9 | — | | Oct. |
| 970 | Wh. Prosper (cp., tin), Breage | 13 18 10 | — | | Feb. |
| 25000 | Wh. Prudence St. Ag. [L. £1] | 0 17 6 | — | | April |
| 240 | Wh. Reeth (tin), Uny Lelant | 96 10 0 | — | | Sept |
| 2000 | Wheal Rose (copper), Scorrier | — | — | | |
| 1500 | Wheal Sarah (tin), Lanivet | 0 9 6 | — | | April |
| 4096 | Wheal Sidney (tin), Plympton | 5 3 1 | — | | July, |
| 2048 | Wh. Sithney & Carnmeal Uni. | 12 19 0 | — | | Aug. |
| 6000 | Wheal Sparnon (copper) | 0 18 0 | — | | Oct. |
| 960 | Wh. Trannack (cop.), Sithney | 2 16 6 | — | | July, |
| 6000 | Wheal Union (cop.), Redruth | 4 14 6 | — | | Oct. |
| 6000 | Wh. Unity (cop., tin), Gwinear | 14 15 0 | 5s. | 3s. 5s. | Aug. |
| 4096 | Wh. Uny (tin, cop.), Redruth | 9 12 0 | 4 | | Sept |
| 4500 | Wheal Vlow (copper) | 0 9 0 | — | | Mar |
| 1024 | Wh. Vyvyan (cop.), Constantine | 9 15 0 | — | | Aug. |
| 994 | Worvas Downs (tin), Lelant | 7 7 0 | — | | June |
| 3097 | Yarner (copper), Devon | 3 15 6 | — | | Sept. |

## MISCELLANEOUS.

| Shares. | Name. | Paid. | Last Pr. | Bus. done. |
|---|---|---|---|---|
| 20000 | Anglo-Mexican Mint | 10 0 0 | — | 18½ 19½ |
| 20000 | City Offices [L. £50] | 3 10 0 | — | |
| 10000 | Discount Corporatn. [L. £100] | 17 10 0 | 12½ | 12¼ |
| 80000 | Ebbw Vale Iron Co. [L. £50] | 5 0 0 | — | |
| 10000 | Gellivara Iron [L. £50] | 5 0 0 | — | |
| 250000 | Gen. Cred. & Fin. Lond. [L. £20] | 4 0 0 | 6⅛ | 6⅜ 6⅛ |
| 20000 | General Steam Navigation | 14 0 0 | — | 24 26 |
| 20000 | Humber Ironworks [L. £50] | 8 0 0 | — | 4¾ |
| 100000 | Imperial Mercan. Cred. [L. £50] | 5 0 0 | — | 6¼ 6⅛ |
| 150000 | Inter. Financial Soc. [L. £20] | 5 0 0 | 6 | 6⅜ 6⅛ |
| 80000 | Joint-Stock Discount [L. £25] | 5 0 0 | — | 2⅞ 3 |
| 50000 | Lond. & Glasg. Engi. [L. £50] | 10 0 0 | — | |
| 40000 | Millwall Ironworks | 5 0 0 | — | 3½ 4 |
| 10000 | National Financial [L. £50] | 5 0 0 | — | 5¼ 5¾ |
| 12000 | Nerbudda [L. £20] [6000 £5 pd., 6000 £1 pd.] | | | |
| 30000 | Nova Scotia Gold & Land [L.] | 2 0 0 | — | |
| 20000 | Rhymney Iron [10000 £50 pd., 10000 £15 pd.] | | | |
| 5000 | Silver's Indiarub. Wks. [L. £50] | 10 0 0 | — | |
| 40000 | Smith, Knight, & Co. [L. £50] | 5 0 0 | — | 3 4 |

*** Those mines with [S.E.] appended have been admitted on the Stock Exchange. Those mines with [L.] appended have been incorporated ... Limited Liability.

*** Our object being to make the Share List correct, we earnestly call upon all who have the power, to aid us, by forwarding any alterations or c... tion which may, from time to time, come under their notice. To shareholders, as well as those officially connected with the mines, we app... information. Reports from mines—in fact, mining intelligence of every description, forwarded to our office, will meet ready attention.

London: Printed by Richard Middleton, and published by Henry English (the proprietors), at their office, No. 26, Fleet Street, E.C., where ... munications are requested to be addressed.—October 29, 1864.